Wash-Day Troubles Ended by a "Self-Working" Washer

Use It a Month *FREE*

Send No Money. We Pay the Freight

ANYTHING familiar about this picture?

Pleasant sight—isn't it?

Cook going on "short notice"—housemaid refusing to stay "another minute," or, perhaps it's "the wash-lady," getting out in a hurry and leaving part of the clothes in the tub and the rest on the floor.

Do you find it hard to keep good servants because of the troubles of wash-day?

Do you have to put your washing out, or have a washwoman in, because your girl will not do such work?

Do you have to keep a girl for no other reason than that you are not strong enough to do your own washings?

Do you depend on laundries?

If so, glance at the picture down on the right, where the turning of a water faucet is the hardest work connected with the week's washing.

The "1900 Self-Working Washer" does all the drudgery.

50 lbs. water pressure, or an ordinary electric light current (alternating or direct), will work this washer and do a big week's washing at a cost of 2 to 4 cents for the work.

All that is necessary to start the work is to turn a water faucet or an electriclight key. Then you do nothing more.

And, as soon as a tubful of clothes is washed a twist of your fingers switches power to the wringer to wring the clothes out.

You don't have to tend this washer.

It doesn't need anything but mere watching.

It works itself.

No rubbing—no drudgery—no work for you.

Only a twist of your fingers to start or to stop the washer, or switch the power to the wringer.

All the rest is done by the water, or the electricity, and the "Self-Working Washer."

And the "Self-Working Washer" saves its cost over, and over, and over again in washwomen's wages, lowered laundry bills, and lessened wear and tear on all your washables.

The "Self-Working Washer" is as great an innovation to washing as automobiles are to locomotion—making mechanical power do the work human or animal force had to do before.

For the "1900 Self-Working Washer" will wash the finest linens, lawns and laces, and get them spotlessly clean, without breaking a thread.

There is nothing about this washer that can wear out your clothes, nor tear them; rip seams nor fray edges; pull off buttons nor break them.

And the "1900 Self-Working Washer" will wash bed blankets, comfortables, carpets, rugs, and get them as clean as clean can be.

To prove this, use a "1900 Self-Working Washer" **one full month FREE.**

We will send one to any responsible party and prepay all freight. Send us no money.

You can use this washer for four weeks' washings, and then, if you don't find it all we claim—if you don't see how it will save its own cost—save wear and tear on all your house linen and washable clothes—save time and trouble and servant worries—just return the washer at my expense and the matter will be closed.

The trial costs you not a penny.

We make this offer because we know the "1900 Self-Working Washer" will do all we say—and save all we say.

And if you keep the washer, you can, if you wish, pay for it out of what it saves for you. Pay us by the week or by the month (suit yourself) until the washer is paid for. Write for our catalog today. Your request will bring you our illustrated Washer Book, by return mail.

Let a "1900 Self-Working Washer" solve your Wash-Day Troubles—**keep your servants contented**—save your laundry bills—and **save your clothes.**

1900 Washer Company, 3017 Henry Street, Binghamton, New York

Comfort for Travelers

A. B. C. Wardrobe Trunk.

You will thoroughly appreciate the A. B. C. line of Trunks, Bags and Suit Cases, for they embody the latest and most useful ideas and inventions in the history of trunk making.

No unpacking when you arrive; no packing up when you leave. Your clothes hang up just as they do in your wardrobe at home; your linen lies neatly in drawers; your hats go in the hat compartment. No matter how many or how few garments you have, adjustable slides keep them free from wrinkles.

Write for our book,
"Tips to Travelers"—sent free on request.

Abel & Bach Company

Largest Makers of Trunks and Bags in the world. : :

Milwaukee, - Wis.

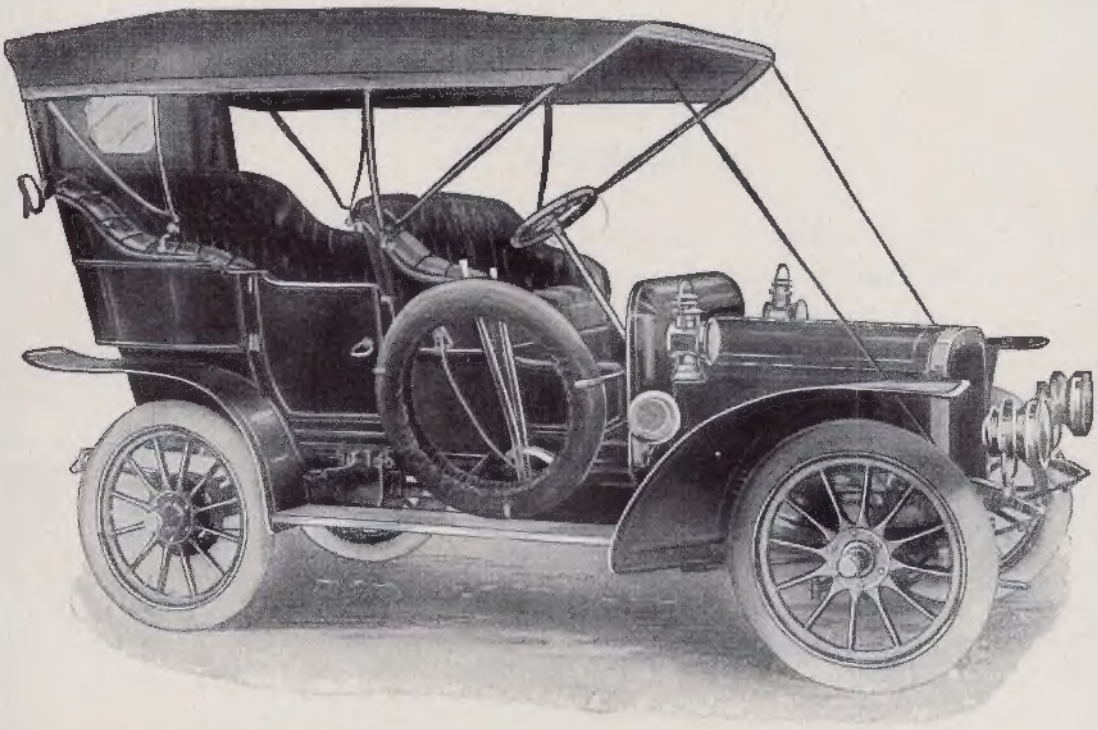
Chicago Salesrooms 46-48 Adams St.,

U. S. A.

Insist upon having this mark on any trunk, suit case or bag you buy. It is your guarantee of quality, style and durability.

No. 575. Extra large English Oxford Bag, made of Genuine Black Walrus. Double handles, hand-stitched and riveted. Edges and corners hand-stitched. Lined with leather, three inside pockets. Price $25.

REMEMBER that in buying an AEROCAR you are investing in a motor car of proven reliability. There is nothing experimental to it. Also that the AEROCAR is delivered promptly to the purchaser fully equipped in every detail as here shown and noted below.



Aerocar

EVERY DAY adds to the practical triumphs of the AEROCAR. Its reliable air-cooled motor is a marvel of flexibility and quick responsiveness to control. It is great in strength because of its lightness in weight and perfect correct mechanical construction. Few parts and every part strong. Because of this strength it measures not only the full standard twenty-four horse power but carries at all times an ample reserve force. It meets the desire for economy not only in gasoline and lubricants, but in WEARING—it has the durability of action which renders repairs practically unnecessary.

The AEROCAR Model A, 1906—24 H. P.—Four Cylinders—Air-Cooled—Five Passengers—Wide range of speed on High Gear—4 x 34 Tires with 2,000 pounds weight—104 inch Wheel Base—Sliding Gear Transmission—Three Speeds Forward and Reverse; and comes to the purchaser furnished complete in every detail of equipment, including Standard Extension Black Top, Two Gas Head Lights, Full Oil Lamp Outfit, Prest-o-lite Tank, Hartford Shock Absorbers, Speedometer, Gabriel Horn, Extra Tire and Inner Tube in Water-proof Case with Attaching Irons, Robe-rail and Foot-rest in tonneau, Tool Box on Running Board. F. O. B. Detroit, $2,800.

Price With Road Equipment, $2,500

Send us your address that we may give you a practical demonstration of this reliable motor car which can always be depended upon every day in the year, under all climatic and road conditions, to meet your highest expectations.

THE AEROCAR CO., Detroit, Mich., U.S.A.

Members American Motor Car Manufacturers' Association

In Touch With His World

AMERICAN TELEPHONE & TELEGRAPH CO.
LOCAL AND LONG DISTANCE TELEPHONE
BELL SYSTEM
AND ASSOCIATED COMPANIES

The railroad president to-day spends the greater portion of the summer at his country home renewing his energy. He keeps in touch with his railroad system over the telephone.

He may be one hundred miles or more away from headquarters, yet *his office* and the *principal business centers* of the country are *within talking distance.*

He is notified immediately when anything important occurs; his advice and direction are asked and given *over the telephone;* the machinery of the road goes on.

Each day, at the noon hour or in the early morning or late afternoon, he conducts his business over the long distance line.

He is in touch with his world.

Through the day he has been renewing his energy—sailing, driving, or playing golf—making himself *more fit for the busier season* and able at all times to handle a larger system and a larger volume of business than the railroad president of two decades ago.

This is simply an illustration *which applies to every busy man,* whether he be railroad president, merchant, manufacturer or professional man.

It shows the importance of universal service, which is the constant aim of the Associated Bell Companies—of *one system,* extending to every nook and corner of the United States, keeping *all* localities within speaking distance of one another.

Long Distance Bell Service is universal in two ways—in its extension to all localities and in its application to all human activities. Whatever your interests, it will advance them economically, certainly, constantly.

The American Telephone and Telegraph Company
And Associated Companies

One Policy, One System, Universal Service

The Fences For Your Stock

THERE are many different kinds of Stock—horses, cattle, sheep, pigs, dogs, deer, birds, poultry, etc.—and each require special fencing just as it requires special feeding.

We make a specialty of Wire Fences for enclosing Stock, and years of experience enables us to furnish the fence best suited to each kind of animal.

All our Wire Fences are made with galvanized Anchor Posts—the only Post that absolutely insures perfect alignment and complete protection against rust.

If you own, or expect to own, any kind of Stock, you will find our new Catalog very interesting reading.

We manufacture and erect Ornamental Iron Work of all kinds, including Iron Railings, Entrance Gates, House Doors, Arbors, etc., etc., as well as Wire Fences for every purpose. One contract covers both the materials and workmanship—and our Guarantee covers our contract absolutely and unconditionally. Original plans, sketches and estimates free; or, we follow your architect's designs. Remember that Anchor Post quality is the Standard quality—pay less and you get less. Catalog describing complete line mailed postpaid upon request.

ANCHOR POST IRON WORKS

39 Park Row NEW YORK

PLANT EVERGREENS

In August and September

A large Juniper being burlapped, preparatory to shipping—the ball has been combed out to show the fine fibrous roots.

PLANT for immediate effect, not for future generations.

START with the largest stock that can be secured.

It takes
Over 20 Years
to grow such Trees and Shrubs as we offer.

We do the long waiting, thus enabling you to secure Trees and Shrubs that give an immediate effect.

Evergreens transplant successfully in August and September. The year's new growth has then matured, and there is yet time for them to become established before Winter. *All our Evergreens* are grown to lift with a compact ball of fibrous roots and earth. *Send for complete list.*

A FEW SPECIAL EVERGREENS

Nordman Firs	up to 10 ft.	Blue Spruce	up to 8 ft.	Hemlocks	up to 10 ft.
Retinosporas	up to 10 ft.	Norway Spruce	up to 10 ft.	White Pines	up to 10 ft.

ANDORRA NURSERIES, CHESTNUT HILL PHILADELPHIA, PA.

WILLIAM WARNER HARPER, Proprietor

PLANT EVERGREENS

In August and September

PLANT for immediate effect, not for future generations.

START with the largest stock that can be secured.

It takes
Over 20 Years
to grow such
Trees and Shrubs
as we offer.

We do the long waiting, thus enabling you to secure Trees and Shrubs that give an immediate effect.

A large Juniper being burlapped, preparatory to shipping—the ball has been combed out to show the fine fibrous roots.

Evergreens transplant successfully in August and September. The year's new growth has then matured, and there is yet time for them to become established in the new location before the winter. **All our Evergreens lift with a compact ball of fibrous roots and earth.**

Send for September Evergreen list.

A FEW SPECIAL EVERGREENS

Nordmann's Firs	up to 10 ft.	Blue Spruce	up to 8 ft.	Hemlocks	up to 10 ft.
Retinisporas	up to 10 ft.	Norway Spruce	up to 10 ft.	White Pines	up to 10 ft.

ANDORRA NURSERIES, CHESTNUT HILL PHILADELPHIA, PA.

WILLIAM WARNER HARPER, Proprietor

Plant Evergreens Now

A large Juniper being burlapped, preparatory to shipping—the ball has been combed out to show the fine fibrous roots

PLANT for immediate effect; *not* for future generations.

Start with the largest stock that can be secured.

It takes
Over 20 Years
to grow such
Trees and Shrubs
as we offer.

We do the long waiting, thus enabling you to secure Trees and Shrubs that give an immediate effect.

Send for Spring Price List.

SPECIAL LARGE EVERGREENS

Nordman Firs	up to 10 feet	Colorado Blue Spruce	up to 8 feet
White Firs	up to 6 feet	Norway Spruce	up to 10 feet
Blue Cedars	up to 8 feet	Swiss Stone Pines	up to 6 feet
Golden Cedars	up to 6 feet	White Pines	up to 10 feet
Weeping "	up to 6 feet	Arborvitaes	up to 12 feet
Retinosporas	up to 10 feet	Hemlocks	up to 10 feet

ANDORRA NURSERIES, CHESTNUT HILL PHILADELPHIA, PA.

WILLIAM WARNER HARPER, Proprietor

W

Life-Giving American Barley

contains more blood-making properties than any other growth of the soil. When able malted and fermented with the energy-building juices of Saazer Hops it renews in weakened bodies the virile vigor of youth. Every drop of

ANHEUSER-BUSCH'S

Malt-Nutrine

fairly bubbles and seethes with the life of mother nature's electrifying earth—the creamy nutriment of ripened barley—the aromatic tonic of Bohemian Hops—the vivifying breezes of country air—the warmth of the sun and the blessings of the gentle rains—all instilled into a living liquid food. Order a case of your Druggist or Grocer today.

For 12 tops of Red Metal caps from Large Malt-Nutrine Bottles with **Gold Trade-mark** or 24 from Split Bottles with **Black Trade-mark** and 15c for postage, we will send one of our Vienna Art Plates to any address in the United States.

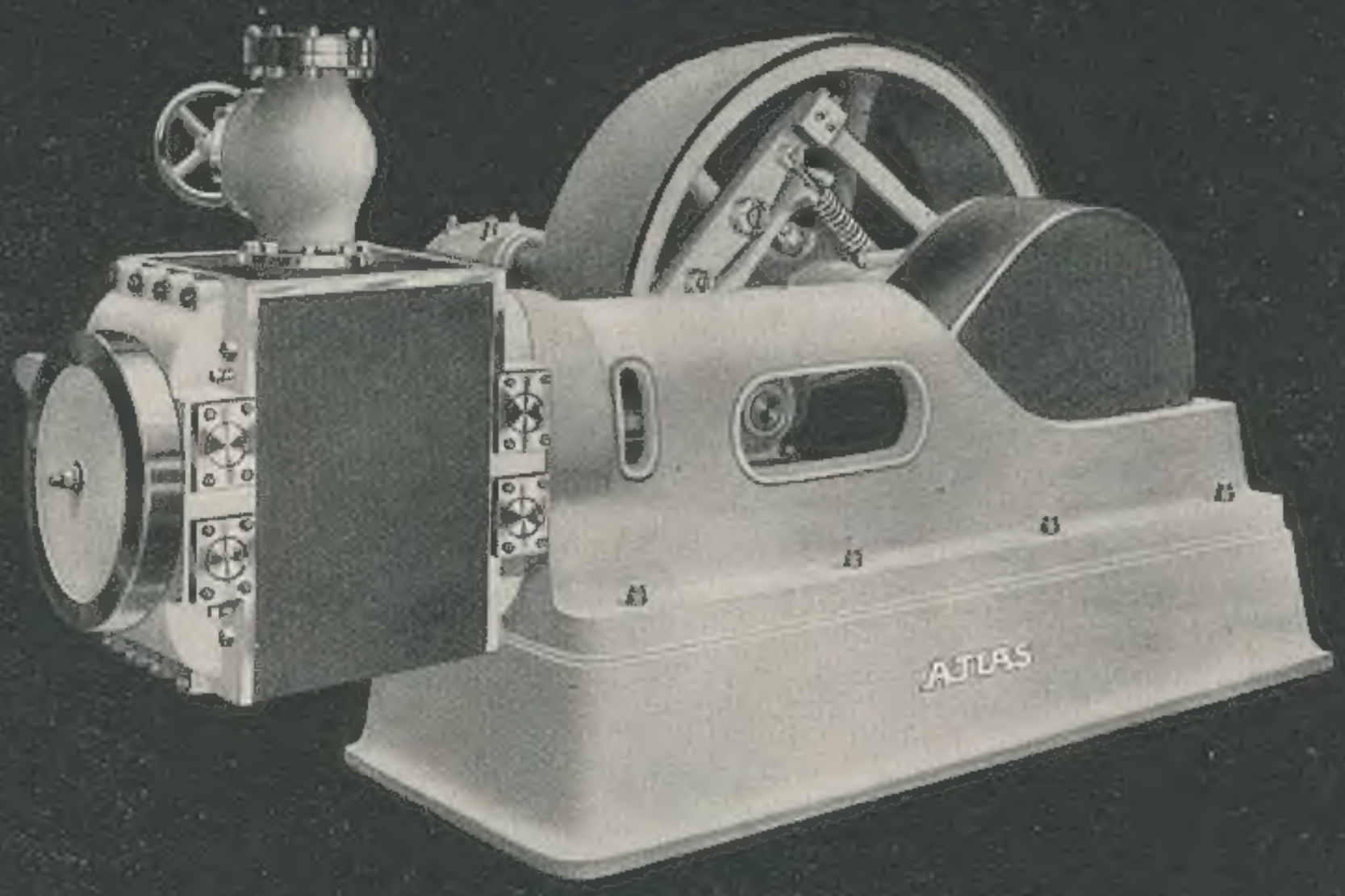
ANHEUSER-BUSCH,
St. Louis, Mo.

MOST DURABLE OF ALL
HIGH SPEED ENGINES

THE SIMPLEST OF ALL
HIGH GRADE ENGINES

THIS REMARKABLE
FOUR-VALVE ENGINE

THE ATLAS



CUTS FUEL BILLS ONE-THIRD

Any Single-Valve Engine, no matter how high the type, is a money-waster as compared with this—and fuel, attendance and repairs cost money.

There are more Atlas Engines and Boilers in service than any other kind. The reason lies in their quality, everywhere recognized as the highest.

ATLAS ENGINE WORKS

PLANT AND EXECUTIVE OFFICES, INDIANAPOLIS
BRANCHES AND SELLING AGENCIES IN ALL CITIES

The Atlas Water Tube Boiler is the only Boiler producing absolutely dry steam.

A CONCRETE RESIDENCE AT ELBERON, N. J. J. H. Freedlander, Architect

"CONCRETE COUNTRY RESIDENCES" is the title of a new book just published by The Atlas Portland Cement Company. This book contains about 90 photographs and floor plans illustrating numerous styles of concrete houses and should be of great value to those who are about to build. It has been collated for the purpose of showing prospective house builders the many advantages to be derived from a concrete dwelling.

A copy of this book (size 10 x 12 inches), will be sent charges paid, upon receipt of $1.00.

THE ATLAS PORTLAND CEMENT COMPANY

30 BROAD STREET Address *Department of Publicity* NEW YORK CITY

Collier's
THE NATIONAL WEEKLY

THE LAND OF COUNTERPANE

SNAPO

STRAND
THEATRE

'Oh, no, Mary, the substitutes for coffee have been denounced more vigorously than the coffee itself.'

Try some raw eggs, dear. They are easy on the stomach."

"Raw eggs!" cried Mr Pendleton, excitedly. "Didn't you see where that writer in *McClure's* magazine said raw eggs were more indigestible than cooked ones!" Mr Pendleton rose quietly from the table and went despairingly into the drawing-room, where he dove recklessly into a pile of magazines and papers.

The girl walked with wondering eyes about the table, yearning within her inmost heart to know why the dinner had not been touched. But she got no satisfaction from the

[illegible] and looked fearfully at her husband. He looked so thin and frail that her heart ached within him. She longed to go over and tell him how sorry she was that "The Bungle" had been [illegible]. It was nothing but an assassination of appetite, anyway.

Presently Mr Pendleton looked up. She detected a rather unusual firmness about his lower jaw, and noted a steely glitter in his eye.

"What's the matter, John?" she asked.

"Matter, Mary? Why, matter enough. I'm hungry, that's what's the matter. And I'm going to eat something, too. Not only something. I'm going to eat the whole d—n thing if it kills me! Let's have dinner."

If Mrs. Pendleton had been at a ball game she would have given three cheers.

Robert C. McElroy

The Latest Books

MARGARET DELAND, the delicate beauty of whose sketches of "Old Chester" has gained her an appreciative and, in a sense, [illegible] has, in her novel, *The Awakening of Helena Ritchie*, stepped quietly but definitively across the line which separates the portrayal of local color from the interpretation of human strength and weakness. The story of Helena Ritchie is a drama of deep emotional appeal, the simple manner of whose setting forth enhances the universality of its truth, and the fact that it is enacted in Old Chester, that our old friends Dr Lavendar and Willie King are intimately concerned in its action and that its atmosphere is the same which has enveloped Mrs Deland's earlier stories, prove how consistent has been the development and how confident is the employment of her art.

The Spirit of the Pines, a novelette by a new writer, Margaret Morse, suggests future possibilities to a watcher by the literary trails, but will barely make a satisfying meal to the hunter by those same runways. Its theme, the romantic meeting, congenial fellowship and mutual renunciation of a man and a woman in the hills of New Hampshire, is pretty but inadequate; and while it is handled with grace and with a delicacy adapted to its frailty, and while this grace and adaptation constitute what is frequently called "subtlety," the story is more of an indication than a performance.

Anna Katharine Green's latest story, *The Woman in the Alcove*, is as good a guessing contest as has come from her unresting pen for some time. Like its predecessors, it is a plot *et pretera nihil*, a plot constructed with sole reference to the mechanics of mystery, assigned to a set of characters among whom one looks

Decorative Leathers

Hand-Tooled, Carved, Sculptured in Mediæval, Spanish, Flemish, Italian and other Styles for Wall Hangings, Screens, Panels, Furniture Coverings, Draperies, Cushions, Mats, Table and Desk Tops, Scrap Baskets, Picture Frames, Music and Manuscript Cases, Etc.

Twenty years practical experience in the reproduction of the best examples of this ancient art-craft, together with the approval of all architects and decorators of standing, insures the satisfactory execution of all orders.

Estimates given for special order work for Architects, Decorators and other clients from our own carefully studied and adapted designs, or theirs to meet all demands, on selected, imported leather in our special, durable, oil-dyed, illuminated or other effects. Reproductions to match Antique Leather. Genuine Antique Leather repaired and remounted. Hand and stamped gold work on leather.

Many Handsome Examples always to be seen at our Show Rooms

BAISDEN-BRAGDON-WEBB CO., 13 West 30th St., New York

Telephone, 780 Madison

MARYLAND

"Grey Rock" A country estate ten miles from the center of Baltimore and six miles from city limits. In the beautiful Green Spring Valley neighborhood, one and one-half miles from the Western Maryland R. R. and the N. C. R. R. Stations. Electric cars pass the gate 400 yards from the house every 15 minutes. Large stone house; extensive views; abundant shade and lawn; house and barn supplied with pure spring-water and electric lights 145 acres—25 native forest, 110 arable, well watered and very productive. Property advancing every year in this the most popular suburb. For sale at investment price. Further details on request.

WILLIAM B. GRAVES, Pikesville P. O. - Baltimore Co., Md.

MARYLAND

Barrett Specification Roof

Thirty Years In Service

The accompanying photograph shows the King Phillip Mill, No. 1, at Fall River, Mass.

Thirty years ago it was covered with 65,000 square feet of gravel roofing laid as advocated in *The Barrett Specification*. No repairs of any kind have been necessary except to the metal work.

The cost to date has been one-fifth of a cent per square foot per year.

This is a fair sample of the service which *Barrett Specification Roofs* give.

Had this building been covered with either a metal roof or one of the many "ready roofings" now being advertised, but which are not adapted to this class of buildings, the *cost of maintaining* same would have been greater than the total cost of the present roof.

Owing to the moist atmosphere and high temperature maintained in cotton manufacturing plants, the roof of this building has been put to an especially severe test. Its record, under these circumstances, proves beyond doubt that *Barrett Specification Roofs* are better adapted and are more economical for use on manufacturing plants than any other form of roof covering.

The record of the King Phillip Mill is only one of many.

To any one interested, we shall be glad to forward the Barrett Hand Book, covering the roofing subject thoroughly.

BARRETT MANUFACTURING COMPANY

New York Chicago Philadelphia St. Louis New Orleans Cincinnati
Kansas City Cleveland Minneapolis Boston Allegheny

Berkey & Gay Furniture Co.

Grand Rapids Michigan

"Furniture *of* Character"

IN order to give some idea of the beauty, dignity, substantiality and worth of our furniture we will have ready for distribution October 1st what we consider the most exquisite furniture booklet ever issued, produced at large expense for limited edition. Its daintiness, handsome illustrations and artistic treatment are in accord with its title, "Furniture of Character," which it most charmingly describes.

It tells about our reproductions of furniture of our Forefathers, and Period Furniture of the time of the Early Gothic, through the English and French epochs, to American Colonial.

Send for our New Edition de Luxe Booklet

This booklet was not designed to be sold nor aimlessly circulated, but intended for persons interested in substantial artistic furniture, to whom it will prove a delight. All such sending 10 cents in stamps or coin to Dept. B for mailing will receive a copy. Should it not please, we will return remittance.

Our shopmark inlaid in the wood in every piece enables you to distinguish Berkey & Gay furniture.

Leading furniture dealers carry it on their floors.

"Our Shopmark Guarantee

BERKEY & GAY FURNITURE

for Furniture of Character"

Real Estate Directory

In this department are printed illustrated advertisements of country homes. A special low rate is quoted for advertisements under this head—cuts made free. Pages close about the sixth of the month preceding publication. Address REAL ESTATE DEPARTMENT, COUNTRY LIFE IN AMERICA, 133-13 East 16th Street, New York.

Mansion 75 feet long, 2 stories high, commands magnificent view

IN THE HEART OF THE BERKSHIRES

AT WASHINGTON, Berkshire Co., Mass.

TWO miles from B. & A. R. R. Station, nine miles from Pittsfield and Lenox, and three miles from Becket.

A BEAUTIFUL SUMMER RESIDENCE

Built on a hill, overlooking a great sweep of country, 2100 feet elevation. Fully furnished; house, 15 rooms, six bathrooms, furnace, open fireplaces, marble mantels in all rooms; a cottage with seven bedrooms, laundry and bathroom; stable with ten stalls, separate coach-house; farmer's house, nine rooms, fine cellar; two ice-houses, filled; abundance spring water, equal to Poland by actual analysis, piped to cottages and farm buildings; 100 acres with groves of beautiful trees. All new and in perfect condition; possession at once if necessary. Will be sold at a sacrifice. Apply to

WM. D. CURTIS, Lenox, Mass.
WM. H. CRANE, Springfield, Mass.
F. A. RUSSELL, Pittsfield, Mass.
or to the owner FRANCIS DANA WINSLOW, 15 Wall St.

Servants cottage and laundry. Children's play rooms.

Farm House, 8 rooms running water

Stable and Coach House, 2 furnished rooms

Grand Canon of Broadway, New York.

The Royal Gorge, Colorado.

Two Grand Canons

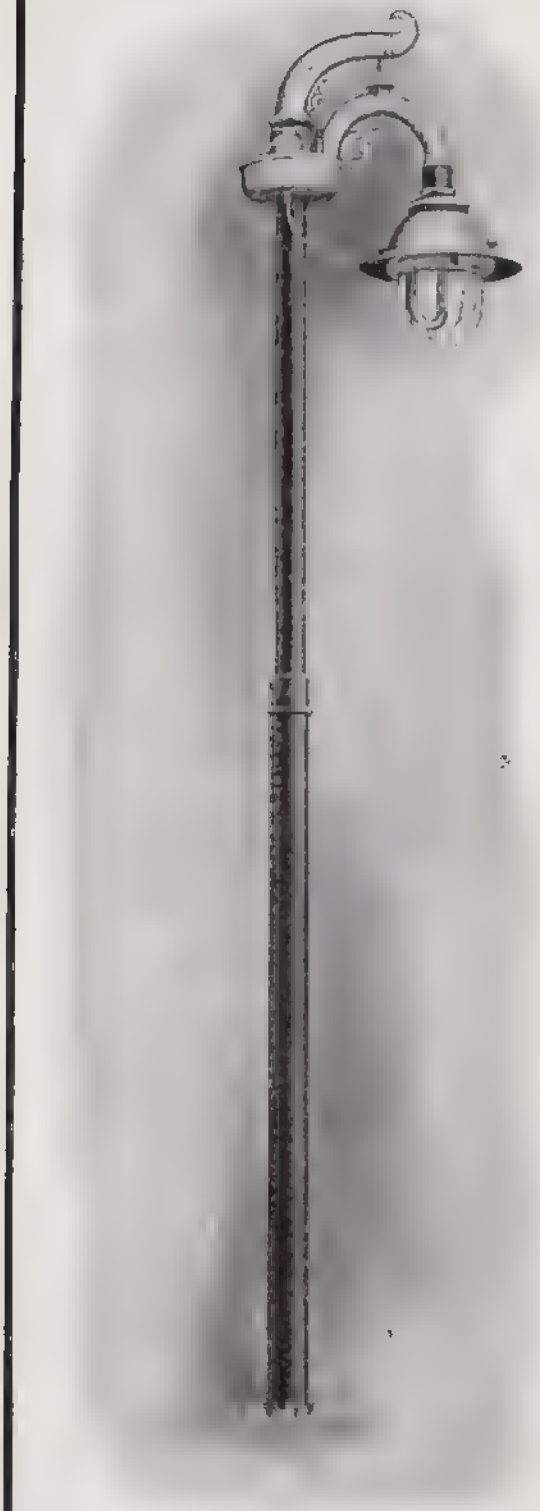
Best reached by the

Big Four Route

Three fast trains daily with *Through Sleepers* between ST. LOUIS and NEW YORK. Parlor and Dining Cars enroute with all the comforts of modern travel. Fast trains at most convenient hours over smooth roadways passing through the finest country in the world.

Call on or address nearest Big Four Agent or

WARREN J. LYNCH, General Pass. Agt., Cincinnati, O.



Auto Arc, 1905 Model. Lowers by weight in post

Take Comfort

by lighting your grounds with a light that is superior to an electric arc at a fraction of the cost.

Blair Automatic Lamps

are acknowledged to be the greatest light producers of the age, absolutely reliable, and no attention required after once lighted. The ideal light for towns and parks.

Complete information and catalog on application.

Blair Light Co.

Northboro, Mass.

SEASHORE LAKE AND MOUNTAIN
RESORTS of EASTERN & NORTHERN NEW ENGLAND and the MARITIME PROVINCES
REACHED BY THE
BOSTON AND MAINE RAILROAD
ILLUSTRATED DESCRIPTIVE PAMPHLETS CONTAINING GAZETTE MAPS HAVE BEEN ISSUED UNDER THE FOLLOWING TITLES AND WILL BE MAILED UPON RECEIPT OF 2 CENT STAMPS FOR EACH BOOK.
ALL ALONG SHORE-AMONG THE MOUNTAINS-LAKES AND STREAMS-TO THE FISH AND GAME COUNTRY OF NEW ENGLAND CANADA AND THE MARITIME PROVINCES-MERRIMACK VALLEY-LAKE SUNAPEE-VACATION DAYS IN SOUTHERN NEW HAMPSHIRE LAKE MEMPHREMAGOG
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SEASHORE OF NEW ENGLAND
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THE CHARLES RIVER TO THE HUDSON,
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RESORTS FOR THE VACATIONIST Illustrated FREE
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COLORED BIRD'S EYE VIEW OF LAKE WINNIPESAUKEE
SENT ON RECEIPT OF 6¢ FOR EACH.
20 POST CARDS OF NEW ENGLAND SCENERY
ON BOSTON AND MAINE SENT ON RECEIPT OF 30 CENTS IN STAMPS
FOR ALL PUBLICATIONS APPLY TO
PASSENGER DEPARTMENT B&M R.R. BOSTON MASS.
D.J. FLANDERS GEN'L PASS'R & TICKET AG'T

Briarcliff Manor, New York

A Resort Hotel and Residential Section in the Westchester Hills

LESS THAN THIRTY MILES FROM NEW YORK

Briarcliff Farm

POCANTICO LODGE, OPEN THE YEAR 'ROUND

Is a Hotel of moderate size and strictly modern equipment. Its near-by location, commanding the above beautiful view over the Valley of the Pocantico, has been selected as the site for large Hotel and Cottage building development during the coming years, and the present Lodge offers to a constantly growing clientele every comfort and refined attention suggested by experienced hotel service. GEORGE W. TUTTLE, *Manager.*

Lodge conveyance meets trains at Pleasantville Station, Harlem Division New York Central, or Briarcliff Manor Station Putnam Division of the same system.

FINE STONE ROADS FOR DRIVING AND MOTOR CAR PARTIES

BRIARCLIFF LODGE

the "Hotel Beautiful" of the fashionable Westchester section, will open June first for an extended Summer season.

Reached by Scarboro Station, Hudson River Division New York Central, or Briarcliff Manor Station, Putnam Division.

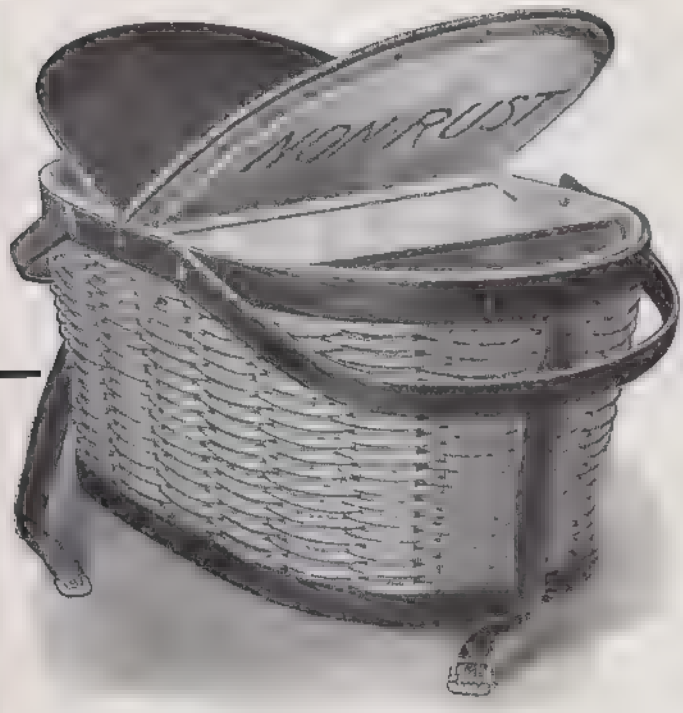
For residential purposes Briarcliff Manor is attracting attention among wealthy people and city workers who want Country Homes. Discriminating ones in this rapidly growing class place among essential requirements convenience of access and avoidance of ferriage, with other specifications in varying sequence. And Briarcliff Manor meets fastidious choice in offering these listed premiums of advantage, with others beyond enumeration:

Short Mileage, Superior and Regular Railway Service, Clean Country and Picturesque Scenery, Good Roadways (probably the best of Educational Facilities), Property Restriction, Ensuring a Community of Continuing Desirability and Safety, together with such other established service factors of modern life as Pure Water in Abundance, a Safe Sewage System, Continuous Electric Service, and 'phone connection with all the World.

Particulars as to land locations, hotel bookings, with literature regarding the place, will be sent to the interested upon application to

E. S. COMSTOCK, Hotel Representative at New York Store, Windsor Arcade, from 9.30 to 1.30. daily, except Sundays.

DAVID P. PLUMER, General Manager Hotel and Realty Interests, Briarcliff Manor, N. Y. ('Phone 5.)



HAWKEYE Refrigerator BASKET

"It Keeps Contents Ice Cold"

NO, it's not like the ordinary lunch-basket – it's just what its name implies a basket refrigerator compact handy—convenient. In our healthy outdoor American life it is more than a luxury it is a prime necessity. Think what it means –when the thermometer is flirting with the 100 degree mark, to have cool butter, sweet milk and fresh, palatable food which you can eat with a zest and relish.

How the Basket is Made

The Hawkeye Refrigerator Basket is made of strong, smooth rattan, fitted with a non-rusting metal lining. Between the rattan and the inside lining is a layer of asbestos packing and a layer of felt.

The ice is contained in a small compartment in one end of the basket which is removable.

The lids and bottom are of hard wood treated the same way, and a strip of heavy felt is piped all around the edge of the lids, which makes the basket practically air-tight - hermetically sealed.

The small piece of ice required will keep the basket cooled down to 58 degrees for 24 hours

For Picnics or Outings

It means keeping all the eatables cool and sweet—butter, salads, sandwiches, pickles, iced drinks, etc. No matter how hot the day, the picnic lunch will be appetizing and fresh.

For Fishing or Hunting

After a long morning's sport when noontide comes, the lunch will be as fresh and appetizing as when you started. Afterwards, the basket will keep your fish or game firm and fresh until you go home.

For Travellers

People who travel any distance can eat their meals unspoiled by the stale, hot atmosphere of a crowded car. For the babies a supply of cool, sweet milk can be kept. Cool food means comfort and health.

For the Automobile

No matter where the automobilist may stop at noon, he can depend on a cosy, refreshing meal, free from dust or warmth, if he carries a Hawkeye Refrigerator Basket We make special sizes to order.

In the sick room, in the office, any place where cool drinks or food are desired the Hawkeye Refrigerator Basket is indispensable.

The Hawkeye Refrigerator Basket will not wear out. The metal lining will keep bright all the time. The top is polished with oil, and the bottom given a thick coat of the best paint to make it more durable and proof against dampness. In fact, we have studied it from every point of view to make it the most serviceable and convenient basket ever offered to the public.

Free 30 Days Trial

The Hawkeye Refrigerator Basket is on sale at hardware, sporting goods and department stores. If you have any trouble finding it, send us your dealer's name and the price of the basket you want. Use it for *Thirty days* and if it doesn't prove just what you want, fire it back and we will return your money without a murmur. Isn't this fair?

Size No. 0—13x9, 7 inches deep,	$3.00
Size No. 1 18x10, 8 inches deep,	$3.25
Size No. 2—20x13, 10 inches deep,	$3.50

Send for free illustrated booklet, containing among other things, a lot of letters from enthusiastic users of the Hawkeye Refrigerator Basket. Write to-day.

BURLINGTON BASKET COMPANY, 607 Main St., Burlington, Ia.

REAL ESTATE—*Continued*

BUZZARDS BAY

FOR SALE

ALMOST charming and attractive residential property located in the easterly part of the town of MARION and adjacent to many large and valuable estates. The property consists of about three hundred and fifty acres, in a most commanding position on Buzzards Bay, and has a shore frontage of over two and a half miles. The general character of the shore is rocky, interspersed with delightful sand bathing beaches. In places the channel closely approaches the shore, affording deep and safe anchorage, especially near the substantial stone dock on the premises. The land rises from the shore in gentle slopes until it reaches the great elevation, for that section of the country, of one hundred and twenty two feet; from the shore to the summit it is covered very largely with an exceedingly handsome growth of hardwood trees, oak, walnut and maple predominating, through which macadamized roads some two miles in extent form the approaches to the house, besides those macadamized roads there are miles of bridle paths. Although the property is very largely wooded, there are extensive lawns, ample flower and vegetable gardens, and pasturage. An unfailing spring, of great capacity, of the purest water furnishes a supply for an elaborate water system. The buildings comprise a mansion house of twenty two master's bedrooms, besides the usual living and servant's rooms; lodges and farmer's cottages, stable, barn, greenhouse, boat and bath houses. While there has been lavish expenditure by former owners in its improvement and adornment, the property will be sold for a sum, much less than cost, which should even interest the mere speculator in seashore residential land schemes. It is one of the finest and best located properties on Buzzards Bay. Mere words cannot express its attractiveness. A rare opportunity for a coterie of friends to purchase and divide for their own occupancy, for the first season using the present commodious buildings as a club. For full particulars apply to HORACE S. CROWELL, 216 Washington Street, Boston, or F. R. Wood & Co., Broadway and 80th Street, New York.

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Each of our yearly productions has been marked by improvements. Our latest and best, the HASKELL-MATCH bal., embodies every good quality of previous Haskell's—with many others added—and undesirable qualities eliminated—and we can confidently recommend it as being by far the very best ball on the market.

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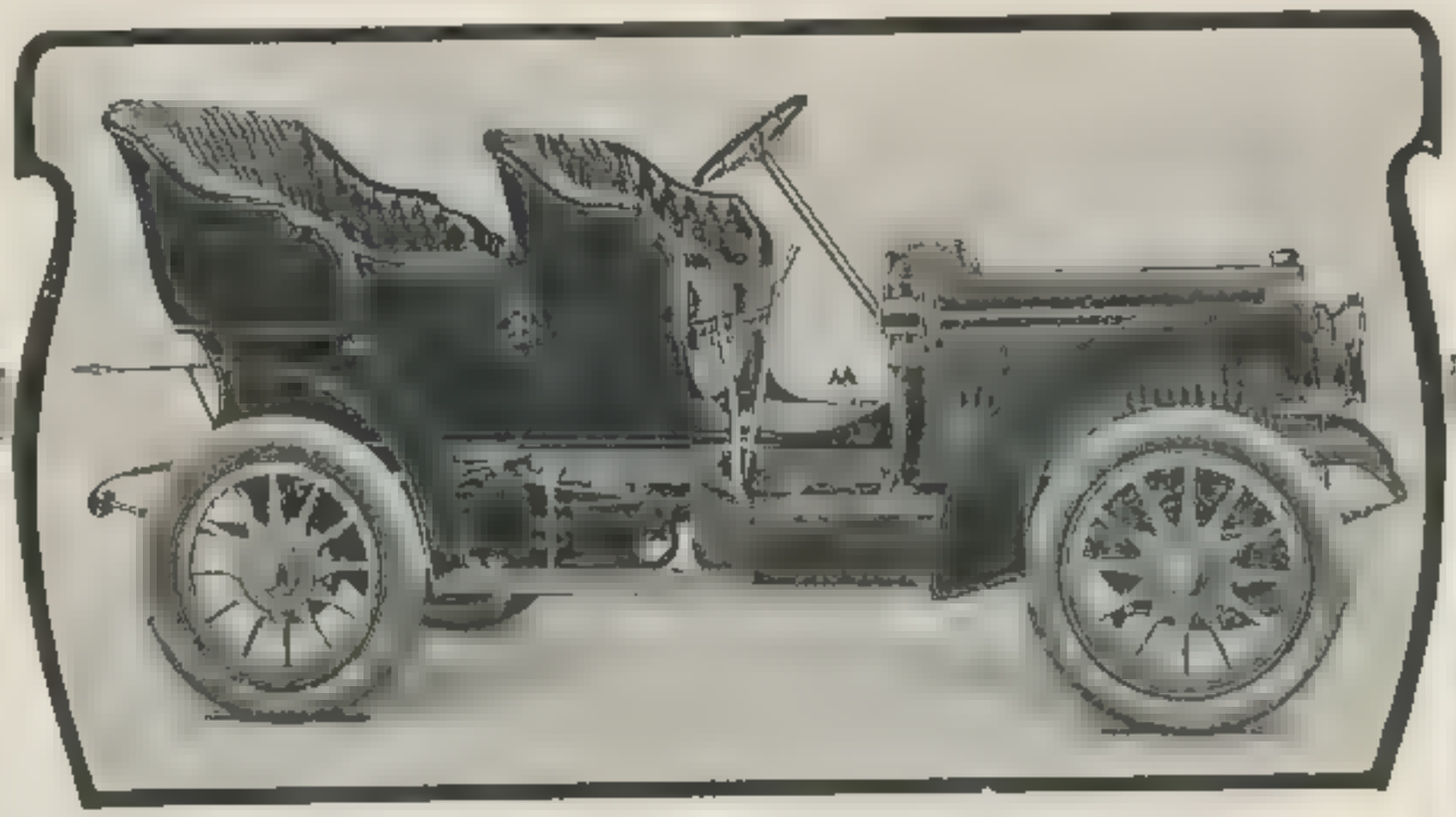
THE NATIONAL WEEKLY

COMEDIES OF CHILDHOOD

JACK IN THE BOX !

VOLUME NO. 9 NOVEMBER 24 1900 PRICE 10 CENTS



Model H,
30 h. p. Touring Car,
$2,500, f. o. b. Detroit.
(not including lamps)

Four-Cylinder Perfection

It is *concentration of effort* that has made the Cadillac what it is. For five years its makers—the master designers and motor builders of America—have focused their endeavors upon a single object—to produce a faultless motor car. A consummation of these efforts is found in the magnificent line of 1906 cars, notable among which are the four-cylinder types. These models embody every point of excellence thus far found in any of the high-priced cars, either of American or foreign make. When you remember the remarkable efficiency of the famous Cadillac single-cylinder engine, and consider this same principle embodied in quadruple form, you will gain a slight idea of the serviceableness of these powerful four-cylinder models of the

CADILLAC

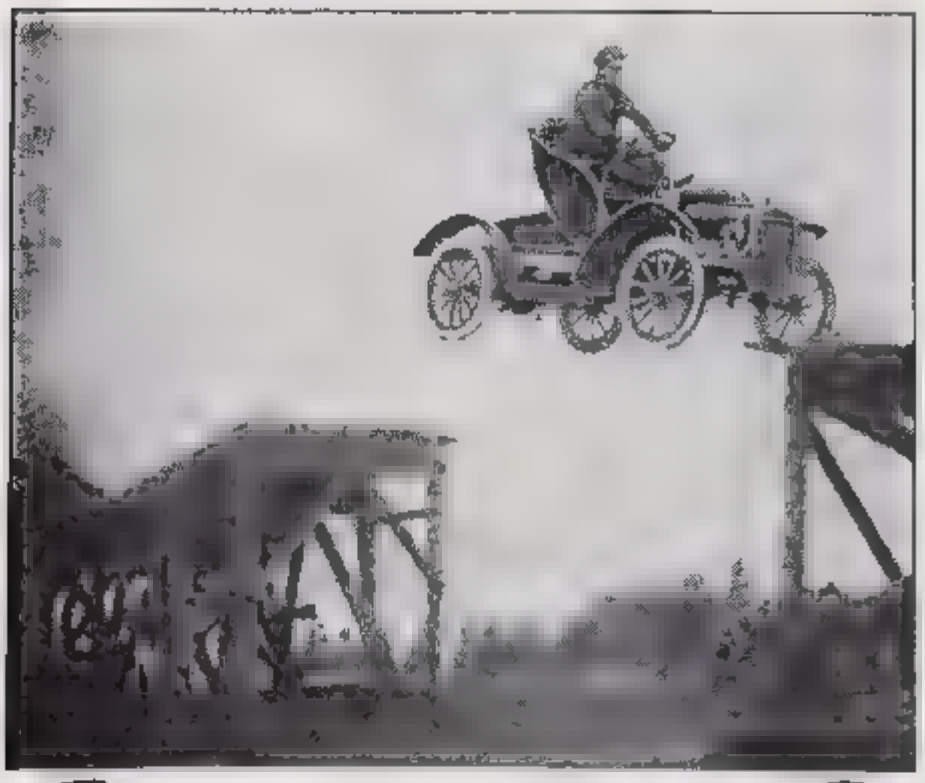
Among the many improvements is an automatic governor which limits the speed of the engine when the latter is disconnected, eliminating vibration and saving much fuel and energy. Another is the mechanically operated oil feed (found on all Cadillac models) which supplies oil to the engine in accordance with its speed, keeping it always in a state of perfect lubrication. Transmission is of the exclusive Cadillac planetary type with specially cut and hardened gears. The bodies are of unusual elegance, and luxuriously appointed. Wheel base of model H (30 h. p.) 100 inches; Model L (40 h. p.) 110 inches. Practically noiseless; comfortable and easy-riding as a Pullman coach.

Let us send address of nearest dealer and our finely illustrated catalog A which will tell you more about the 1906 Cadillacs. A car to suit any purse, any requirement.

Model K, 10 h. p. Runabout, $750.
Model M, Light Touring Car, $950.
Model H, 30 h. p. Touring Car, $2,500.
Model L, 40 h. p. Touring Car, $3,750.
All prices f. o. b. Detroit.

CADILLAC MOTOR CAR CO., Detroit, Mich.

Member Asso. Licensed Auto. Mfrs.



That the structural strength of the Cadillac is much greater than ordinary service requires is shown in the fact that this machine was the only one found to stand the strain of "Leaping the Gap," as pictured above. Either the axles or frame of all other machines tried bent under the heavy impact. With the

CADILLAC

Runabout shown (a regular stock car) the performer is making repeated trips without the slightest damage to his machine.

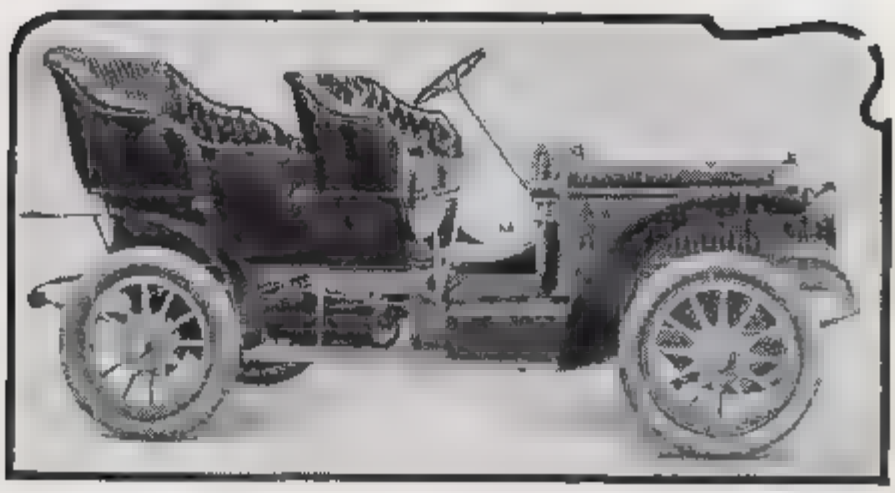
While this proves nothing to the person who wants an automobile to meet ordinary conditions of road travel, it does show that the strength of the Cadillac is never found wanting, no matter what the test.

This and the many other sterling qualities of the Cadillac will be cheerfully demonstrated by your nearest dealer, whose address we will send upon request. Let us also send our illustrated Booklet D

Model K, 10 h. p. Runabout (shown above), $750.
Model M, Light Touring Car, $950.
Model H, 30 h. p. Touring Car, $2,500.
All prices f. o. b. Detroit. Lamps not included.

Cadillac Motor Car Co.,
Detroit, Mich.

Member A. L. A. M.



Model H, 30 h. p. Touring Car, $[illegible] f. o. b. Detroit. (Lamps not included.)

Thorough *mechanical finish*—so fine and minutely wrought as to bespeak more than ordinary pains and skill—is one of the many features that make the

CADILLAC

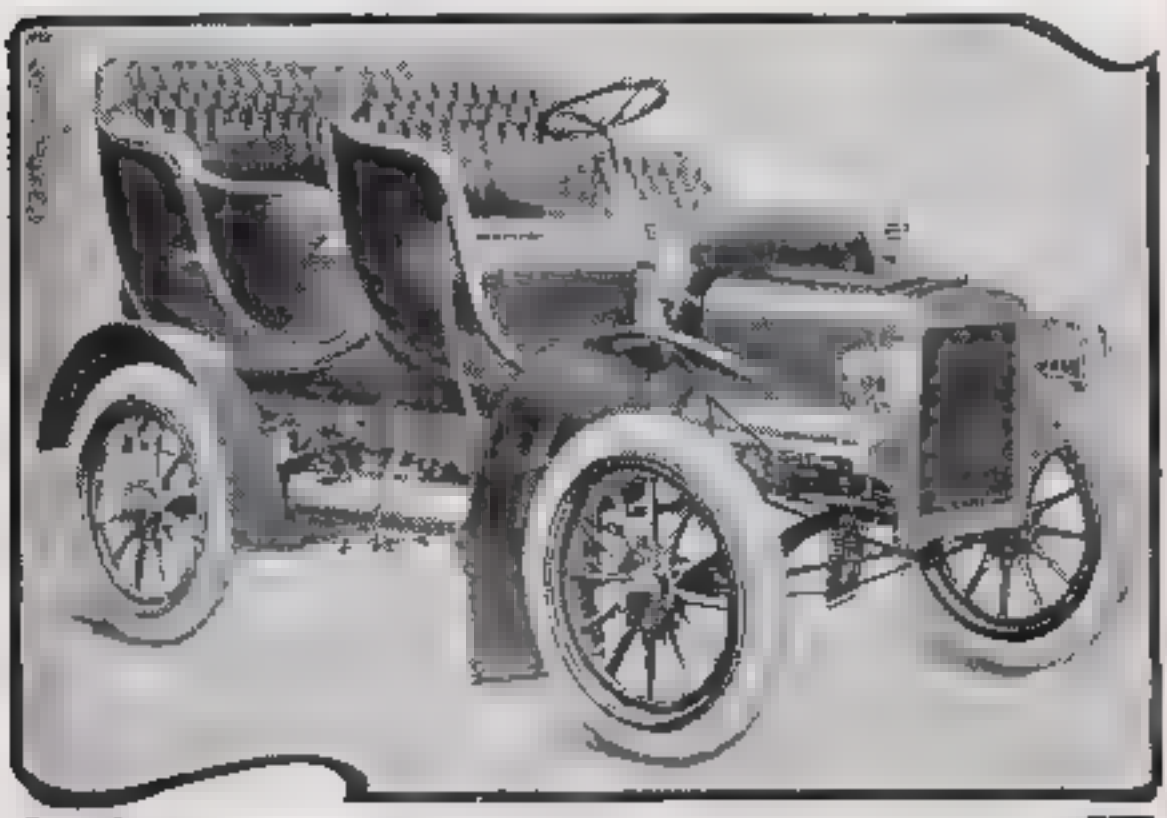
notable for its smoothness of running and virtually trouble-proof in its construction. This carefulness of building, coupled with mechanical principles of proven correctness, result in never-failing dependability of service—in surprising economy of maintenance.

Cadillac value is most apparent under the severer tests of travel. Ask your dealer to give you a demonstration. His address and illustrated Booklet D sent on request.

Model K, 10 h. p. Runabout, $750
Model M, Light Touring Car, $950
Model H, 30 h. p. Touring Car, $2,500
Model L, 40 h. p. Touring Car, $3,750
All prices f. o. b. Detroit.

Cadillac Motor Car Co.,
Detroit, Mich.

Member Asso. Licensed Auto. Mfrs.



Model M Touring Car, $950, f. o. b. Detroit.
(Lamps not included)

Motor Value

The Cadillac is undeniably the greatest automobile value ever offered—not alone in fairness of price but in the satisfaction and everlasting service received for that price. In fact, there are few establishments, if any, sufficiently well equipped to produce cars the equal of the

CADILLAC

at an actual *factory cost* of less than our selling price. This is but one of the many benefits a Cadillac purchaser derives from the wonderful combination of equipment, skill and experience that backs up every car we build.

The Cadillac couldn't be better if you paid just twice the price. Your dealer will tell you why. His address—also our finely illustrated Booklet D—will be sent upon request.

Model K, 10 h. p. Runabout, $750
Model M, Light Touring Car, $950
Model H, 30 h. p. Touring Car, $2,500
Model L, 40 h. p. Touring Car, $3,750
All prices f. o. b. Detroit.

Cadillac Motor Car Co., Detroit, Mich.

Member Asso. Licensed Auto. Mfrs.

IF YOU ARE FROM MISSOURI

or if you are not this photo WILL SHOW YOU Fourth Street, Portland, Oregon, a street, under a heavy traffic, paved four years ago with OREGON FIR BLOCKS TREATED WITH AVENARIUS CARBOLINEUM; its condition today is perfect and it gives every indication of a long life. If you are interested in protecting the money you spend for lumber and timbers write us for facts.

RELIABLE TESTIMONIALS.

G. W. Boschke, Chief Engineer, Southern Pacific and Oregon Ry. & Nav. Co.

Reative to Avenarius Carbolineum as a wood preservative, I beg to state, that my investigations have *convinced* me, that it is actually a "Preservative" and we expect to use it wherever expedient. Our orders, which I believe have been of considerable size, speak for themselves, and demonstrate our confidence in the Avenarius Carbolineum treatment.

Actually Preservative

W. A. J. Edinger, Constr. Engineer, Harriman Lines.

The work done by you at Portland, Ore., on roundhouse floors of fir blocks treated with Avenarius Carbolineum has been entirely satisfactory and I am free to recommend both your work and the preservative used.

Fir Paving Blocks.

CARBOLINEUM WOOD PRESERVING COMPANY

DEPT. B, PORTLAND, OREGON, U. S. A.

Offices: New York, Milwaukee, Seattle.

NEW YORK, September 12, 1906.

MR. FRANK E. DOOLY, General Agent,
National Union Fire Ins. Co., Portland, Oregon.

DEAR SIR:

Re. The Linen Thread Company

We are pleased to advise you that the National Union Fire Ins. Co. of Pittsburg, who are heavily interested for our client in policies of insurance covering on their stock in their San Francisco store, have made a very prompt payment; paying the full amount claimed, and we advise you of this so you can write with this Company lines of insurance in their behalf.

Very truly yours,

(Signed) E. C. ANDERSON & CO.,
Insurance Experts.

When in need of Insurance, look up local agent of the NATIONAL UNION.

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is a new Fireproof building of the best type, located

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Housing the largest of all institutions of Musical Learning.

Containing ZIEGFELD HALL — An Ideal Auditorium—offering unsurpassed facilities for rehearsals and public appearances of students in Concert, Opera and the Drama.

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Acquisitions to the faculty:
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The Leading School of Music and Dramatic Art. Seventy eminent instructors. Unsurpassed Teachers' Training Department. Public School Music. School of Acting, Hart Conway, Director. Diplomas and Teachers' Certificates. *Many free advantages.* Thirty free scholarships awarded to talented pupils of limited means. Twenty-fourth season begins September 9, 1909. Catalogue mailed free on application. **JOHN J. HATTSTAEDT, President.**

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Correspondingly low rates from other points.
Tickets good in tourist sleeping cars on

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Electric-lighted through fast train Chicago to Southern California every day in the year, via the Chicago, Union Pacific & North-Western Line and the newly opened

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Daily and personally conducted from Chicago to San Francisco, Los Angeles and Portland without change. Double berth in these cars (accommodating two people) only $7.00. Choice of routes. All Agents Sell Tickets via the

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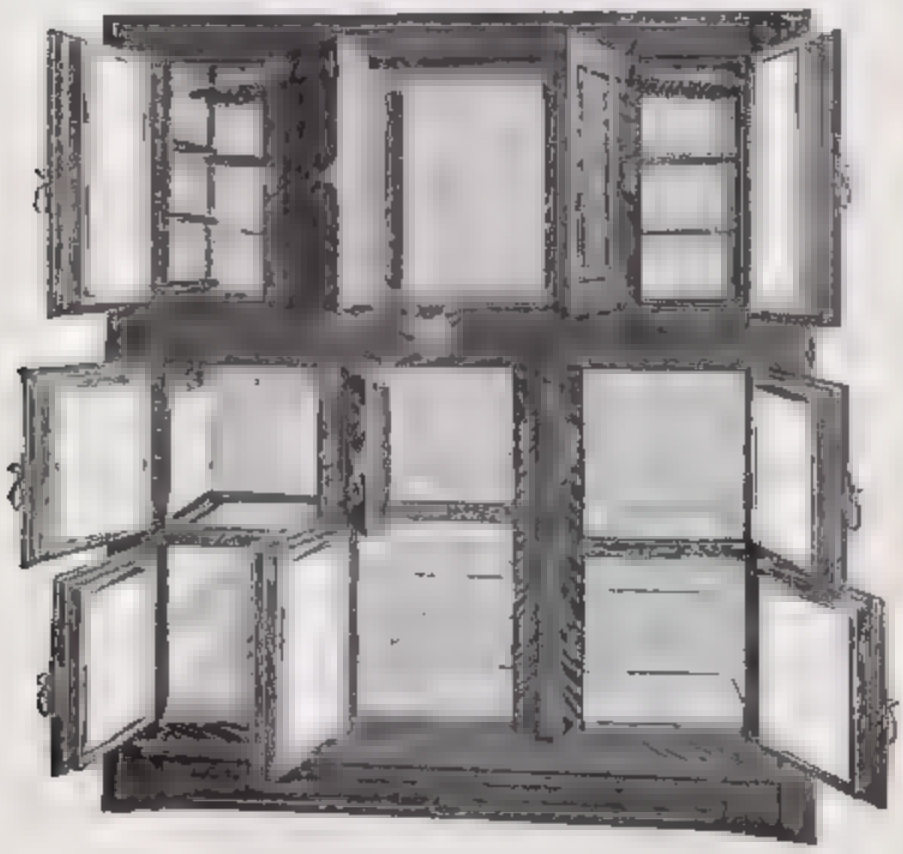

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Solid Chinalain

Chinalain is a wonderful mineral substance, not merely glazed on the surface like porcelain and tile, but the same hard, smooth, brilliant, white substance, *all the way through.*

This uniform consistency makes Chinalain a perfect and *permanent* refrigerator lining. It never becomes porous, never roughens on the surface, never affords places for moisture and food to collect and breed germs.

The food compartments of Chinalain Refrigerators are snow-white with an unbroken, polished surface. Each wall is *one solid piece;* the corners are rounded with tight mouldings of polished aluminum.

There are no inaccessible air flues to become foul in Chinalain Refrigerators. The circulation is entirely within the spotless lined walls. The drain pipe does not pass through the food compartments, but is encased in a *separate* compartment of its own.

Chinalain Refrigerators are built for permanent satisfaction and purity.

They are sold only direct from factory. We make a specialty of building refrigerators to order, iced from inside or outside. Outside walls of Chinalain when desired.

Write for our catalogue No. 51
and free sample of Chinalain.

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ART GLASS DOMES

Leaded art glass domes, of which there is the most exquisite blending in colors, will : :

Finish and Furnish

a dining room or entrance hall as nothingelse can.

While our work is of the very highest character, having in our employ some of the most skilled workmen and, for years, having been engaged in the manufacture of church, country house and other leaded glass work, as well as that of the Domes, : : :

Our Prices are 25 per cent Lower.

Our glass resembles the Venetian in depth and richness of its coloring. Made to meet the **COLOR SCHEME** of any room, thus giving and emphasizing perfect harmony in the blending of tones. **Special Designs made to order.**

Used with either Gas or Electricity.

ILLUSTRATED BOOK FREE. We would like very much to send you our illustrated book. May we do so?

The Cleveland Window Glass Co.

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I am not a *so-called* antique dealer (who usually sells merely Ante-Bellum junk) but make **authentic reproductions from priceless pedigree museum originals,** by Chippendale, Sheraton and Hepplewhite.

Also, I have made a loving life-study of the **histories** and **values** of these, so that coming from my shop these pieces have the **stamp** of **authenticity** and personal research.

If you are collecting, let me know in what pieces you are especially interested, and I will send you pictures, prices, etc.

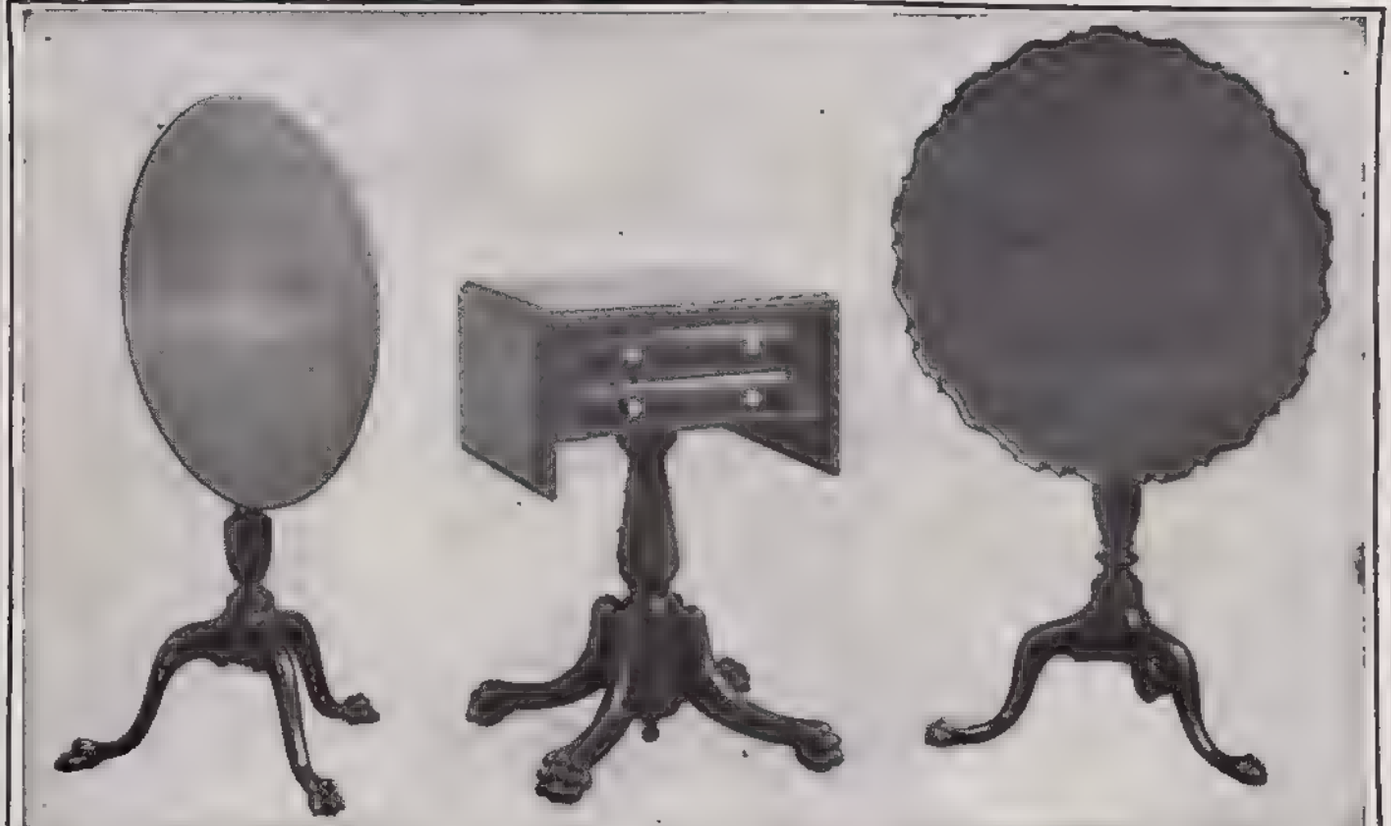
I also make a feature of **furnishing a room or house complete,** and show copies of antique **wall papers, furniture coverings** and **curtain stuffs.**

If you will send me a rough plan of your room I will offer suggestions and colour schemes. No obligation, to purchase, on your part—no importunity on mine. Write for my booklet.

CLIFFORD M. CROSSLEY

Decorator and Furnisher in the English Periods

SUITE 1829, LAND TITLE BUILDING, PHILADELPHIA



Clinton Tilt-Up Tea-Table, No. 17 Burnett Sewing-Table, No. 78 Pie Crust Tilt-Up Tea-Table, No. 111

Really-Truly Colonial Furnishing

I am not a *so-called* antique dealer (who usually sells merely Ante-Bellum junk) but make **authentic reproductions from priceless pedigree museum originals,** by Chippendale, Sheraton and Hepplewhite.

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"A Quaint Living-Room 'Assembling.'"

Quaint Colonial Furnishing and "Assembling."

What is "assembling?" I'll tell you:—It's something more than Colonial furnishing, and something more than decorating.

It is the right placing and coloring of Colonial WALL PAPERS, COVERINGS, CURTAINS and FURNITURE.

Having made a loving life-study in this "assembling" of Colonial, Georgian and Queen Anne things, I give my personal suggestions and replies to correspondence, at the same time sending you special samples, pictures of furniture and color-schemes, on request.

I make no charge for this service, and the obligation is mine, for the privilege of submitting my things to your notice.

Send me a rough plan or sketch of your room or rooms and tell me too much about them, rather than too little.

No importunity. No follow-up letters.

Don't bother me about anything but the English periods, as I am a specialist in them alone.

Write for my booklet.

CLIFFORD M. CROSSLEY

Decorator and Furnisher in the English Periods

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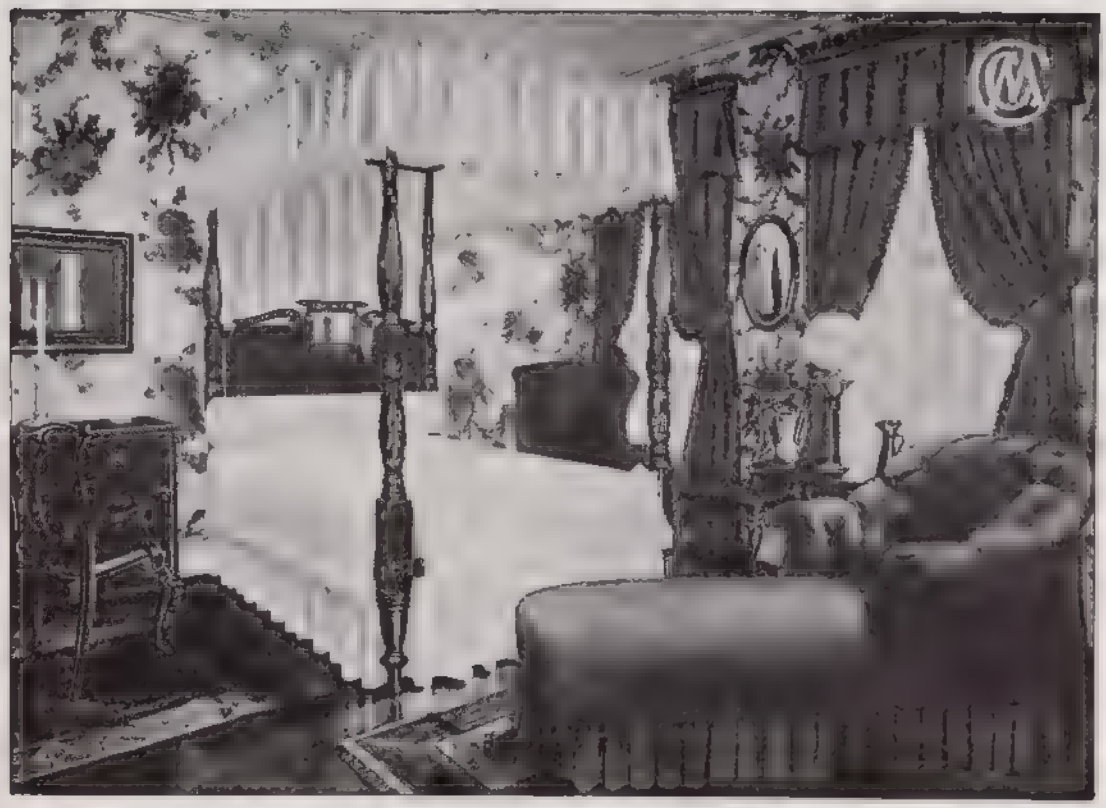

Picturesque Colonial Furnishing *and* Decorating

I am not the only *dealer* in **Colonial Furniture.**

I *am* the only **Furnisher, Decorator** and **"Assembler"** *in the world,* who makes the **Colonial** and **English** periods his specialty.

My furniture is all reproduced from **Pedigree Originals.**

My **Wall-Papers** and **Textures** are all copied from the antique, and I am making a decided success in suggesting how to *"assemble"* all of these. What colours for **Coverings,** what **Curtains, Wall-Papers,** and so on.

If you would like to consult me about your room or rooms, send on your plan or rough-sketch, telling me all you wish to do, and samples, suggestions, colour-schemes and pictures of furniture will go forward.

This will not obligate you to purchase anything. No vulgar follow-up letters.

Consult the other fellow about the French periods—I am a specialist in Georgian, Colonial and Queen Ann.

Write for my booklet; it tells all about this interesting "assembling" and furnishing.

CLIFFORD M. CROSSLEY

Decorator and Furnisher in the English Periods

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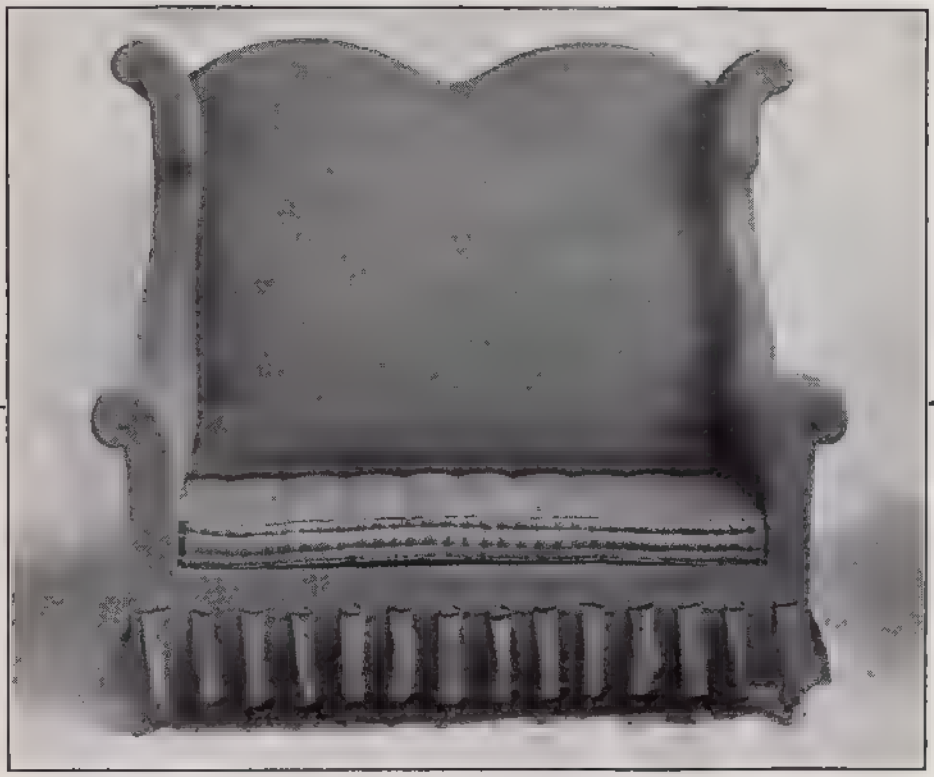

SCANDAL AND TEA SETTLE NO. 55

Pedigree Colonial Furniture, Wall-Papers *and* Stuffs

Do you know the where, when and how of the much neglected question of **Colonial Upholstered Furniture** and its importance in connection with mahogany pieces, to say nothing of the right **Antique Coverings, Curtains and Wall-Papers,** to go with it.

Colonial things should *nestle to antique colourings.*

I do not claim expert knowledge on theology, politics or social-ethics, but as I *have* made a loving life-study of Colonial furnishing and "assembling," it may pay you to send me your plans, and have me send you pictures of **Furniture,** with attendant colour-schemes and samples of **Wall-Papers** and **Stuffs** with full suggestions for your rooms.

Also write for my booklet.

CLIFFORD M. CROSSLEY
Decorator and Furnisher in the English Periods
SUITE 1829, LAND TITLE BUILDING, PHILADELPHIA

COLFAX PONY CARTS

LITTLE CARTS FOR LITTLE FOLKS

"A pony cart" is the dream of childhood. Where is there a prettier picture than the sedate Shetland drawing a basket car freighted with happy children? And what better pastime than this which keeps them in the fresh air and close to nature?

Our jaunty Basket Body Governess Car is one of the famous products of our long experience. It is built very strongly but not heavily, and with a full load is easy on the pony. Made in two sizes, unlined, and can be washed with the hose.

If you want a Pony or Small Horse Vehicle of any kind, insist that your dealer get you a "Colfax." If he doesn't comply, send us his name and address and we will direct you accordingly.

WRITE FOR BIG CATALOGUE

THE COLFAX MFG. CO. SOUTH BEND, IND.

PAT. 1905.

It's a Snap

FOR THE MAN WITH THE HOSE

BECAUSE IT

Snaps	Is made tight by the water pressure
Saves Time	Will not let hose twist or kink
Saves his Hose	Cannot lose the washer
Saves his Temper	Will not wear out
Saves his Wife's Temper	Will not leak
Also his Wife's Fingers and Skirts	Swivels

IS WARRANTED TO WORK

The Snap Hose Coupling is a supplementary coupling to be placed between the hydrant and hose, between two pieces of hose, between the hose and the nozzle, or any place where a quick and easy connection is desired. The parts of the coupling will fit on any hydrant or hose thread.

Its value lies in its convenience and usefulness.

FOR SALE BY YOUR DEALER

Or Sent Postpaid for 35c Each, 3 for $1.05, and Worth it

Descriptive Circular Free.

Manuf'd at Peoria, Ill. All mail orders filled from Boulder.

Nelson & Morrison, Dept. M., Boulder, Colorado

There's Nothing like a Pony Trap for Children

This little trap has all the style and correctness of the finest full sized trap; adjustable back seat changes it from dos a dos to runabout. ¶ It is the material and workmanship of "Eagle" pony vehicles that make them give such service. ¶ Our catalog shows our 32 new styles of pony vehicles and pony harness. Write for it and name of dealer in your city who handles them.

THE EAGLE CARRIAGE CO., 1305 Court Street, Cincinnati.

MARK XLVII

40-45 HORSE POWER

Has many exclusive features of definite value, making it the most reliable, easiest riding, and handsomest high-powered car to be had—the one best adapted to all conditions of touring and general use. The improved transmission and drive conserve and carry to the limit of effectiveness the power developed by the motor. Contains more chrome nickeled steel (tensile strength 255,000 pounds, elastic limit 135,000 pounds), than any other car made. With luxurious touring car body, 7 passengers, $4,500. Royal or Double Victoria Body, $5,000; Limousine, $5,500.

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Catalogues and illustrated pamphlets on request; also separate catalogues of Columbia Electric Carriages and Columbia Electric Commercial Vehicles

ELECTRIC VEHICLE COMPANY, HARTFORD, CONN.

New York Branch: 134-136-138 West 39th St. Boston: Columbia Motor Vehicle Company, 74 Stanhope St. Chicago Branch: 1332-1334 Michigan Ave. Washington: Washington E. V. Transportation Co., 15th St. and Ohio Ave. Philadelphia: Pennsylvania Electric Vehicle Company, 250 North Broad Street.

MEMBER A. L. A. M

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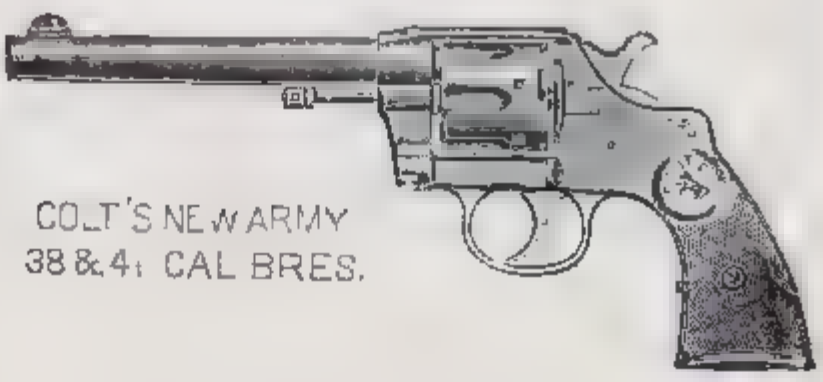
"New Army"

Revolver is known and used all over the world. Made for *use* and to *stand up* under it. An ideal revolver for outdoors; is medium in weight, yet takes one of the most powerful cartridges.

Simple, effective, at all times reliable. Has a perfect hang, balance and grip. A combination of accuracy, durability and reliability, recognized by the United States government when they adopted it as the standard revolver for the United States Army.



COLT'S NEW ARMY
38 & 41 CAL BRES.

For over 50 years the standard of the fire-arms world—COLT

OUR CATALOGUE "SINGLE ACTION" DESCRIBES THIS AND OTHER COLT MODELS

COLT'S PATENT FIRE-ARMS MFG. CO.

Hartford, Conn. London, 15A Pall Mall, S. W.

New
"Birdie Blye"
Rose.
2 year old, 50c. each
Extra size, 75c. each

Plenty of Roses

Fresh Every Morning from Your Own Garden

You can have the finest roses all summer long at trifling cost—the very roses that bring fancy prices at your florist's if you get good stocky plants.

We have spent our best years in the culture of roses, and devote our time to the choicest varieties that make sturdy, luxuriant growers, and persistent bloomers.

Our roses are the very best—for variety, beauty, fragrance, abundant bloom, and strong, well-rooted plants.

The roses named below are ready for immediate planting, and will bloom this summer.

New "Birdie Blye" Rose

is one of the finest new roses, and is introduced by us exclusively. You can get it nowhere else this year.

Buds are beautiful carmine, and open into a full bright satiny double rose 3 inches in diameter. Particularly fragrant; bush grows three to four feet high; and blooms constantly from early June until freezing weather. 2-year old plants, 50c. each; extra size, 75c. each.

17 Favorites Ready to Bloom

All these roses are strong 2-year old field-grown plants, started in, ready to plant, and go right on growing and blooming this summer, without interruption.

Special Late-Season Prices: 30c. Each; $2.50 Per Dozen

All seventeen varieties and "Birdie Blye" rose, $4.00.

For delivery anywhere in the United States, by express, add 50c. per dozen (75c. for the 18) to above prices

Beauty of Rosemawr, rosy red
Gruss an Teplitz, reddest of red roses
Mrs. R. B. Cant, deep rose pink
Etoile de Lyon, largest and hardiest yellow
Perle des Jardins, rich golden color
Bessie Brown, beautiful pink
Hermosa, old-fashioned rose
Lady Roberts, rich apricot, shading to coppery red
La France, unsurpassed
Mad. Eugene E. Marlitt, rich carmine red
Maddalena Scamarandis, magnificent lilac pink
Maman Cochet, exceedingly rich flesh color
Kaiserin Augusta Victoria, pure white
Clothilde Soupert, white with centre of bush pink
Bride, white
White Maman Cochet creamy white
"Philadelphia" Rambler, best of Hardy Climbers. (The improved Crimson Rambler)

Order to-day. Write anyway for our Art Book, "How to Grow Roses" and our new Floral Guide (136 pages) about roses and many other flowers. Both free.

The Conard & Jones Company, Box 43, West Grove, Pa.

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BELLE HAVEN

THIS beautiful country place consisting of 4 acres, high land, beautiful water view, three minutes from beach, large attractive house of 22 rooms, 14 sleeping rooms, 7 baths, all improvements. Handsomely furnished. Beautiful grounds. Large stable. For sale or for rent, furnished, at $5,000 for the season.

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SITUATED in a choice location at Greenwich, Conn., this beautiful Country Place, consisting of 5 acres of high land overlooking the Long Island Sound and country for miles, unobstructed view. Grounds attractively laid out. Large house, well built, of 20 rooms, 13 sleeping rooms, 3 baths, all improvements, large rooms, stable, gardener's cottage and other outbuildings. 2½ miles from station over good roads. ½ mile from golf club.

These properties have been inspected by me and I recommend the same.

RIVERSIDE, CONN —For sale only. Large place on the water front, 6 acres, attractive grounds. House of 13 rooms, Stable Price, $30,000. Bargain.

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And a number of other Choice Places for sale and for rent. Best informed broker on residence property

THOMAS N. COOKE, *Real Estate Broker*

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Telephone No. 430

PEONIES

THE wide range of delicate coloring, the immense size and profusion of bloom makes the Peony the most wholesome of all garden flowers -the magnificence of the newer sorts rivaling the best features of the Rose. With beauty of foliage, freedom from disease and ease of culture it is the peer of all hardy herbaceous perennials. Our collection consists of over 80,000 plants in 400 varieties, which always secure the highest honors at the leading exhibitions. Send for our illustrated catalogue containing thorough, authentic descriptions and all the information required for selecting and planting this most popular plant of the day.

BEAUTIFUL GROUNDS

If your grounds are undeveloped and you recognize the need and value of improvements you will be wise to not plant a tree or a shrub until you have secured some responsible advice on the proper method of procedure. Have an experienced designer study the possibilities with you and determine the effects that should be produced and adopt a plan. Thus you will be enabled to regulate your expenditures to your convenience, but always certain of being satisfied with the final result and with a positive saving in the end. Address our Landscape Department and prepare now for Fall Planting.

We have 112 acres of New York City property devoted to the culture of fine nursery stock grown for immediate landscape effect.

COTTAGE GARDENS CO., Ltd.

Queens, Long Island, N. Y.

A DAY WELL SPENT

JUNE IS THE TIME to see the Magnificent

Gold Medal Collection of Peonies and Hardy Rhododendrons in Full Bloom

at the

COTTAGE GARDENS NURSERIES

QUEENS, LONG ISLAND

Our **Peony Collection** consisting of **80,000 Plants** comprising 300 varieties has been awarded:

Gold Medal, Pan American Exhibition
" " Horticultural Society of New York
Silver Medal, World's Fair, St. Louis
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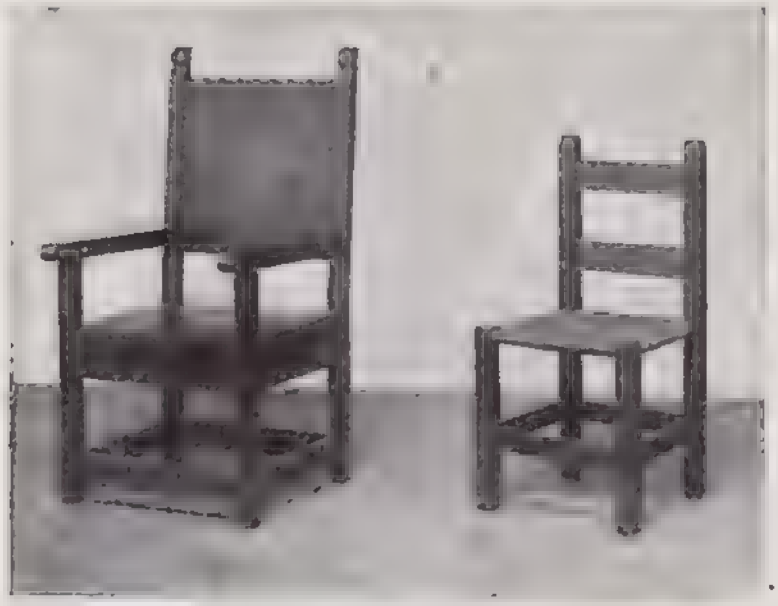
and is acknowledged by Peony experts to be the finest and most comprehensive collection in the world.

Our Collection of Rhododendrons consists of 40,000 plants in various sizes and comprises all named varieties known to be hardy in this section. The finest display of this hardy flowering shrub ever seen in America.

Queens is reached by all Long Island Steam and Electric trains from Brooklyn, also Garden City and Hempstead trains from Long Island City.

Call Long Distance 'Phone 91 L. Jamaica, and conveyance will meet any train.

"Briar Cliff" Hand Made Furniture



We make high grade *hand* made furniture, very durable and particularly pleasing because of the superior excellence of its design and workmanship. Our product is vastly superior to the ordinary factory made furniture, and we solicit commissions for supplying furniture to homes, country clubs, schools and country houses.

Special work from design or suggestion promptly executed.

The Craft Settlement Shop

Ossining-on-Hudson New York

"Briar Cliff" Hand Made Furniture

A Man's Chiffonier

We make high grade *hand* made furniture, very durable and particularly pleasing because of the superior excellence of its design and workmanship. Our product is vastly superior to the ordinary factory made furniture, and we solicit commissions for supplying furniture to homes, country clubs, schools and country houses.

Special work from design or suggestion promptly executed.

The Craft Settlement Shop

Ossining-on-Hudson New York

A GLIMPSE OF THE BARRACKS

A LANDING DRILL AND SKIRMISH ON SHORE

CUTTER DRILL UNDER SAIL

The Right Kind of Vacation for a Boy

THE right kind of vacation should interest him, should keep him out of doors, should refresh his mind, harden his muscles, and should give him the comradeship of good associates. All these conditions are ideally fulfilled by the CULVER SUMMER NAVAL SCHOOL, with its healthy and beautiful location on Lake Maxinkuckee its extensive equipment, its large staff of experienced instructors; its fine class of boys from every section of the country, its interesting and muscle-making drills in U. S. man-of-war cutters, and its attractive variety of athletic and aquatic sports. An hour or so of the forenoon is spent in study—the rest of the day out of doors. 187 boys from 25 states last summer. For beautifully illustrated catalogue, address

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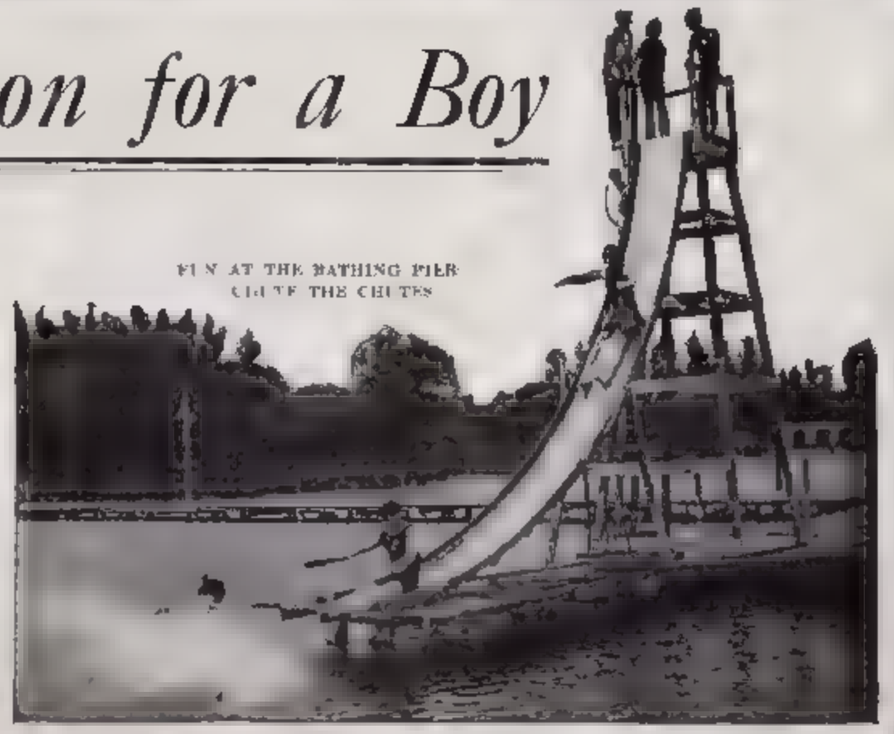

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CHUTE THE CHUTES

Burton Water Works

For Country Homes

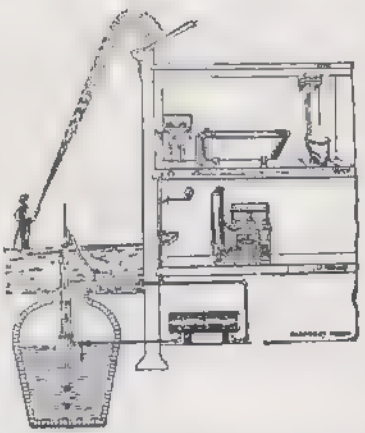
Own Your Own Water Works System

Where city water is not available. A Burton Water Supply System will give you running water in every room in your house—water in your barn—a lawn sprinkling system of your own. It affords you fire protection, decreases your insurance rate, increases the value of your property, makes your home sanitary, and protects the health of all the family.

Easy to install, easier to operate and lasts a life-time. Costs $75.00 and up.

Sold on 30 Days' Trial

A hand pump, wind-mill or gasolene engine forces water and compressed air into the tank, and the pressure resulting delivers the water wherever you want it.



Write for catalogue explaining in detail the merits of a Burton System. Satisfied users in every State in the Union.

C. A. Burton Machinery Co.

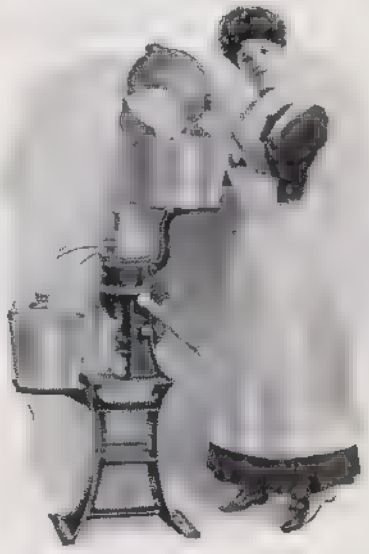
4 W. 2nd St., Kansas City, Mo.

EVERY FARMER KNOWS

That The

DE LAVAL
CREAM SEPARATORS

are in a class by themselves as the best separators. But many have the mistaken idea, which competitors help to magnify, that they are "expensive" and that something "cheaper" will do in their stead.



THE FACTS ARE THAT THE

De Laval Cream Separators

are not only the best but at the same time by far the cheapest—in proportion to the actual capacity and the actual life of the machine.

These are simple facts easily capable of proof to any buyer who will take the trouble to get at them and who need only apply to the nearest DE LAVAL agent or send for a catalogue to do so.

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1213 Filbert Street
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General Offices:
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109-113 Youville Square
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THE WORLD'S STANDARD

De Laval
Cream Separators

700,000 IN USE
Ten times
all others combined

Save $10 per cow
Every Year of Use
over all Gravity
Setting Systems
and $5 per cow
over all Imitating
Separators.

If you own two or more cows you need a De Laval Machine

Send for new 1906 Catalogue

The De Laval Separator Co.

Canal & Randolph Sts.,
CHICAGO

74 Cortlandt Street
NEW YORK

Over 5,000 Branches aud Local Agencies

World's Best Butter

De Laval Cream Separator Triumph At National Dairy Show

The great DAIRY SHOW and NATIONAL BUTTERMAKERS' CONVENTION held at CHICAGO, February 15th to 24th, awarded ALL HIGHEST BUTTER PRIZES to entries made from DE LAVAL SEPARATOR CREAM, the prizes and the scores being as follows:

GRAND PRIZE—GOLD MEDAL

A. CARLSON, Rush City, Minn ..... Score 97

SILVER MEDAL

J. E. HOWE, Oakland, Minn ..... Score 96½

SILVER CUPS

E. J. SIMONSON, Milton, Wis..... Score 96
W. H. BECHTEL, Caro, Mich..... Score 96
LOUIS NIELSON, Camp Point, Ill..... Score 96
F. L. ODELL, Greenfield, Iowa..... Score 95½

Out of the total 610 butter entries 559 were DE LAVAL users, the other 51 representing the users of all other separators combined, while of the 496 entries scoring 90 and over, 463 were DE LAVAL made, the other 33 covering all competitive users together.

All this is in keeping with what has happened at every previous Convention Contest of the National Buttermakers Association since its organization in 1892, all highest awards having been made, without exception, to DE LAVAL users.

While in evidence of the recognition of DE LAVAL superiority by the best buttermakers everywhere, it is important to note that the proportion of DE LAVAL made entries has never been less than 85 per cent., and at the present Great Show was over 91 per cent. of the total number.

A DE LAVAL catalogue, gladly sent for the asking, will help to make plain WHY under like conditions DE LAVAL cream produces butter superior to that which can be made in any other way. Write for it to-day.

The De Laval Separator Co.

Canal and Randolph Sts.
CHICAGO

74 Cortlandt Street
NEW YORK

OVER 5,000 BRANCHES AND LOCAL AGENCIES.

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One of the finest buildings in this country, is a fair example of the many notable structures in which the builders have used exclusively

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Portland Cement

Concrete

Concrete is THE building material of today—economical, fire proof, weather proof—BUT to be sure of the best Concrete in your house, do not fail to specify Dragon Portland Cement.

If you are planning to build, the advice of our Engineering Department is yours for the asking, without charge. Write for our latest book—it contains much valuable information—we send it free.

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New York ERNEST H. AUERMAN, Pres. Philadelphia

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has a larger circulation than any other magazine claiming to be in the same class.

¶ It stands first in the good opinion of advertisers who value high-class publicity.

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Simply send us a postal and ask for our free illustrated 9,059 word Business Booklet which tells how priceless Business Experience, squeezed from the lives of 112 big, broad, brainy business men may be made yours—yours to boost your salary, to increase your profits. This free booklet deals with

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BETTER — STRONGER

More lasting in flavor than any other.

A try—a test—Good-bye to the rest!

Sold in 5¢ 10¢ and 25¢ packets

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THE DR. HOLBROOK SCHOOL, established in 1866 by Rev. D. A. Holbrook, Ph.D., and conducted by his sons, is a preparatory school for boys, situated in the hill country of Northern Westchester County on Briar Cliff, five hundred feet above sea level and dominating the lower Hudson Valley : : : :

Its equipment is adequate. It has proper facilities for all Sports and Athletics. It aims to make school days pleasant as well as profitable. Its discipline seeks to enlist the co-operation of all right-minded boys, and it strives to arouse the spirit of responsible self-direction on the part of the older pupils.

For illustrated catalogue giving all particulars and ample references, address

THE DR. HOLBROOK SCHOOL Ossining, New York

'Running Track'

THE DR. HOLBROOK SCHOOL, established in 1866 by Rev. D. A. Holbrook, Ph. D., and conducted by his sons, is a preparatory school for boys, situated in the hill country of Northern Westchester County on Briar Cliff, five hundred feet above sea level and dominating the lower Hudson Valley.

Its equipment is adequate. It has proper facilities for all Sports and Athletics. It aims to make school days pleasant as well as profitable. Its discipline seeks to enlist the co-operation of all right-minded boys and it strives to arouse the spirit of responsible self-direction on the part of the older pupils. ∴ ∴

For illustrated catalogue giving all particulars and ample references, address

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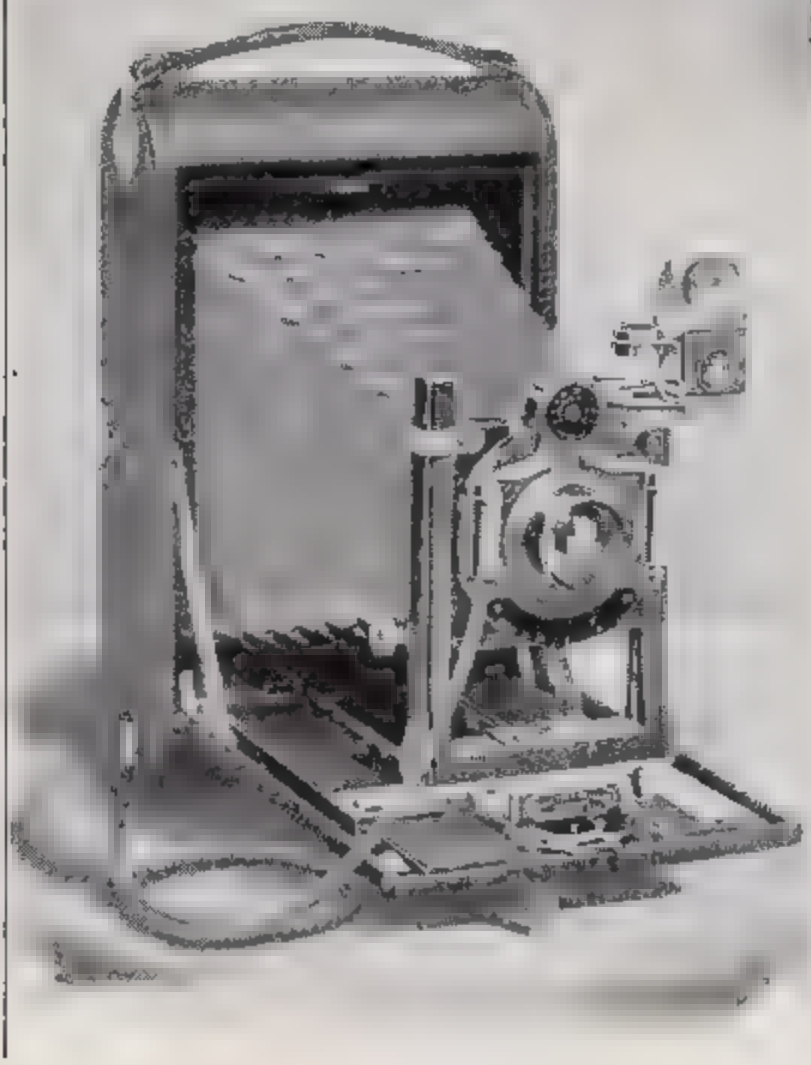
FOR SHOTGUNS
AND RIFLES
DU PONT
POWDER



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for pictures

4¼ x 6½ inches

The new 4A Folding Kodak makes the taking of large pictures a simple matter —it gets away from the conventional sizes yet is as simple to operate as a Pocket Kodak.

In its construction nothing has been neglected. The lenses are of high speed (*f*.8), strictly rectilinear and being of 8½ inch focus insure freedom from distortion. The shutter is the B. & L. Automatic, an equipment having great scope in automatic exposure, yet so simple that the amateur can master its workings after a few minutes examination.

Equipped with our automatic focusing lock, brilliant reversible finder with hood and spirit level, rising and sliding front and two tripod sockets.

A Triumph in Camera Making.

Price, $35.00.

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MOTOR BOATS

25 Foot Electric Launch 65 Miles on One Charge

Electric Launches

ABSOLUTELY SAFE RELIABLE NOISELESS

All the comforts of the summer cottage piazza while afloat, can be operated by a lady.

"THE IDEAL LAUNCH"

Where no electric current is available for recharging the batteries, we now furnish electric launches equipped with a "Charging Motor," which makes them independent of all outside electrical supply and serviceable for use on all mountain lakes, rivers, and the remote sections of the country.

Elco Gasolene Motor Boats
21 to 110 ft. in length of any type

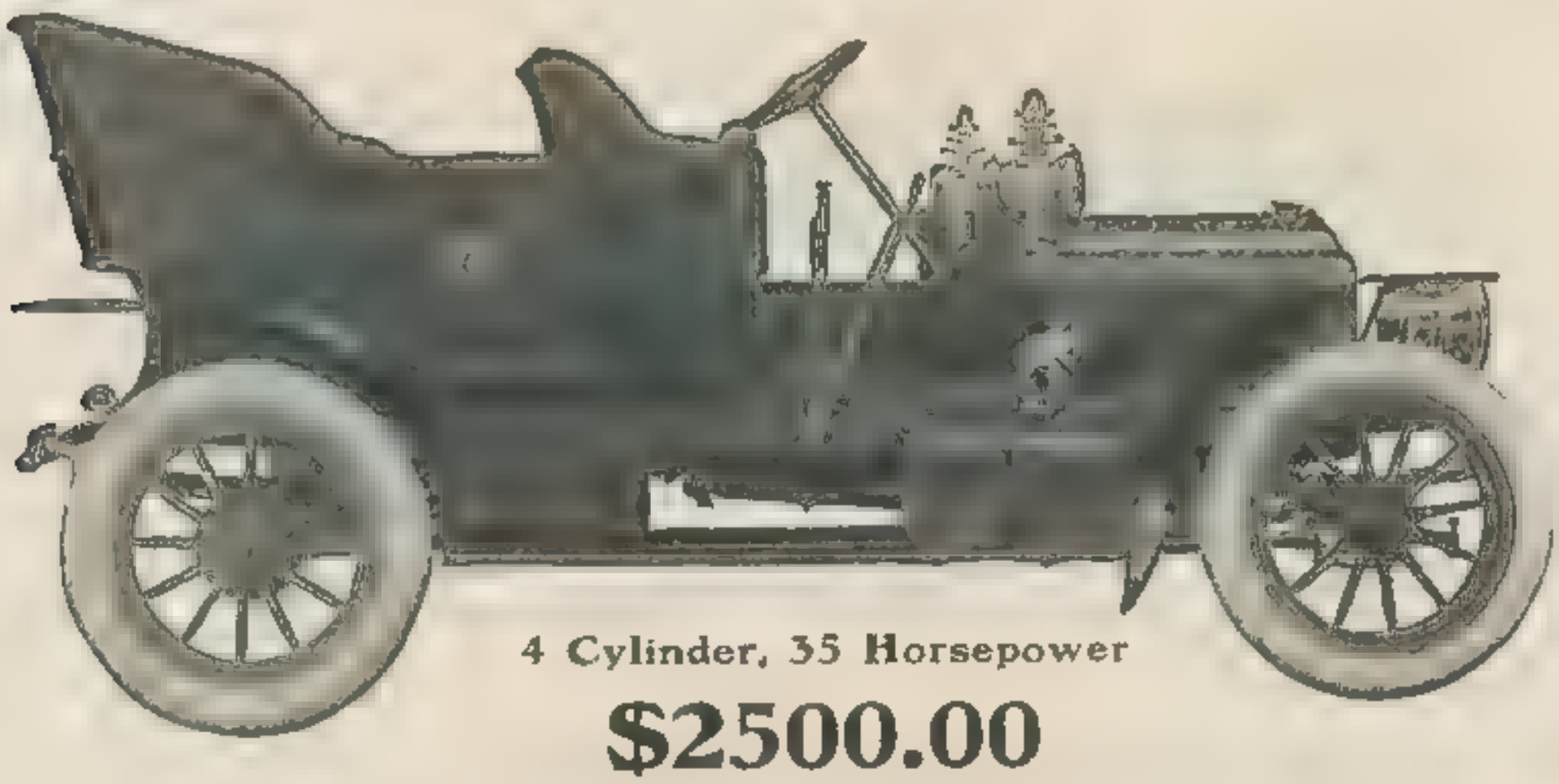
You choose the engine, we build the boat; or we furnish it complete fully guaranteed.

Send 4 cents for Illustrated Catalogue

THE ELECTRIC LAUNCH CO.
Main Office and Works:
AVENUE A, BAYONNE, N. J.

30 minutes from Liberty St., N Y City, C. R. R. of N J

The Simplest Engine in the World



4 Cylinder, 35 Horsepower

$2500.00

The Two-Cycle Elmore

When you understand that the two-cycle Elmore engine does away with 18 to 20 parts on each of the four cylinders, and absolutely eliminates all inlet and exhaust valves with their attendant mechanism, you'll agree with us, won't you, that this is the simplest engine in the world?

Do we need to point out that this also reduces the cost of operation and upkeep to the minimum, and makes the Elmore the most economical as well as the simplest engine in the world?

From whatever standpoint you examine the two-cycle Elmore, equally impressive and sensational features present themselves.

The four-cylinder car produces approximately as much power as would eight cylinders of the four cycle type—produces it in a continuous and unbroken application that will carry the car indefinitely on the high speed under any and all road conditions.

Again—it is the most successful self starting engine in the world. Again—you can cut out one, two, or three cylinders at will, both spark and gasoline. With one cylinder cut out the difference is imperceptible except in speed; with two cut out, barely noticeable. Do you see the economy of this?

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It starts with a smooth, gliding motion that is delightful, and dips down and over uneven spots with a minimum of jolt or jar.

The four-cylinder Elmore at $2500.00 and the two-cylinder Elmore at $1500.00 are two cars whose manifold exclusive features demand your most serious consideration. Learn all the wonders of the two-cycle type by getting in touch with the nearest Elmore agent or by writing for our new descriptive catalogue and books of information.

THE ELMORE MFG. CO., 1404 Amanda St., Clyde, Ohio

Members A. L. A. M.

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September Planting

IRIS TRUE TO DESCRIPTION

GERMAN, twelve distinct sorts.
JAPANESE, twenty-four distinct sorts.
PUMULA, SIBERICA, ETC., ETC.

Plant Now and Enjoy a Fine Display the Following Spring

PAEONIES

Our collection includes practically all the new and the best of the old sorts. The ones we catalog are true to description and are offered in four sizes. The two larger sizes will produce a display of flowers the following season if planted in September.

EVERGREENS

The leading sorts are grown in large quantities and our collection includes also many which are very rare and fine specimens which take up with a ball of earth.

STRAWBERRY PLANTS POT GROWN

If set out soon will produce a crop of luscious fruit the following season. The varieties we offer have proven themselves to be both delicious in quality and productive.

HOLLAND BULBS OCTOBER AND NOVEMBER PLANTING

Only the best grade offered. Hyacinths, Tulips, Narcissus, Jonquils, Crocus, Iris, Lilies, Ranumculus, Scilla, Snowdrops, Anemones, Crown Imperials, etc., etc.

Special Autumn List and General Catalog

Both will interest you and are yours for the asking. An extensive stock here to select from and every facility for the prompt handling of all orders are features which will make your dealings with us a source of mutual satisfaction.

THE ELM CITY NURSERY COMPANY

NEW HAVEN, CONNECTICUT

Visitors always welcome at the Nursery

The Elm City Nursery Co.

PLANT IN THE FALL

From now on until the ground freezes hard, planting can be done successfully. When all the rush of early spring comes, what a relief and economy it will be to have the hardy plantings all in and out of the way. Further, many things do far better planted in the fall.

FRUIT TREES
BERRY PLANTS
GRAPE VINES
FL. SHRUBS
SHADE TREES
FL. VINES
HARDY ROSES
LILIES
HOLLAND BULBS

OUR CATALOG

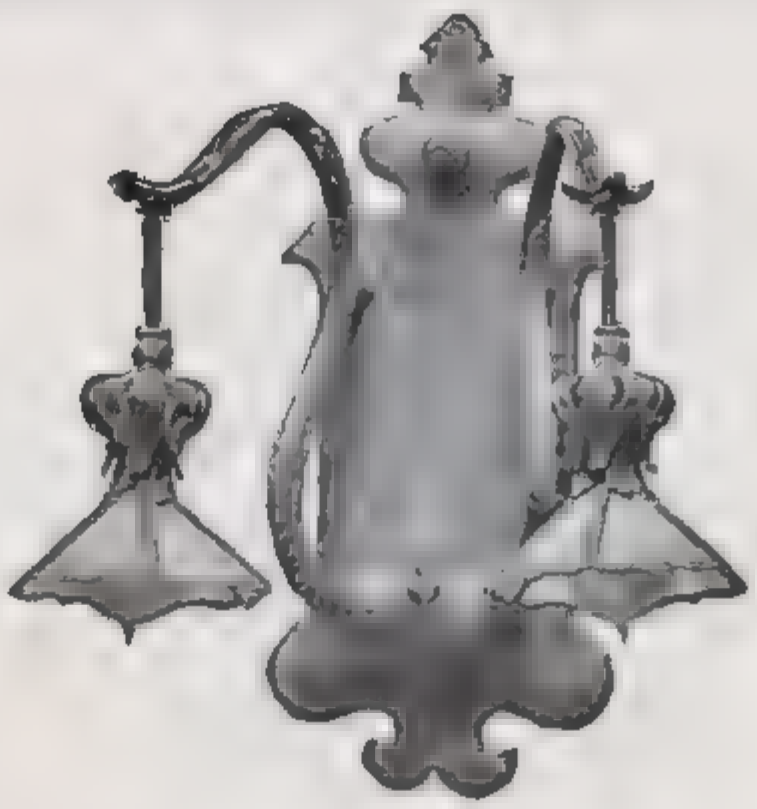
contains a very complete list of the desirable sorts of the above, sizes and prices being plainly given.

This catalog is yours for the asking.

Try our Stock and Business methods, both will please you

The Elm City Nursery Company
NEW HAVEN, CONNECTICUT

Visitors always welcome at the nursery



A LIGHTING fixture is lighted, on the average, from four to six hours each day. The rest of the time it either serves as an object of decoration or becomes an inharmonious note in the surroundings, irrespective of its lighting value.

¶ We rather incline toward lighting effects that appear equally to advantage lighted or not lighted.

¶ All of our work is stamped with our trade mark for the protection of our clients.

THE ENOS COMPANY

Makers of Lighting Fixtures.

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The Land of Opportunities

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The Heart of the World-Famed Willamette Valley

The Most Beautiful and Richest Valley in all the West

The great West is rapidly coming to the front and offers splendid inducements to manufacturers.

EUGENE will be a Manufacturing Center

If you are interested in the manufacture of any of the following, we can interest you, because we can offer you splendid inducements: paper, furniture, woodenware, farm implements, wagons and buggies, incubators and poultry supplies, flour and cereal milling, boots and shoes, leather goods, woolen goods, hosiery, etc., fruit and vegetable canning.

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Timber for the Lumber Manufacturer or Capitalist—Lane County, of which EUGENE is the county seat, has the largest amount of standing timber (government estimate) of any county in the United States, 34 billion feet. Think of that, Mr. Investor, doesn't that mean "money in the country?"

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An organization of all the Leading Merchants of Eugene to tell the truth about this country.

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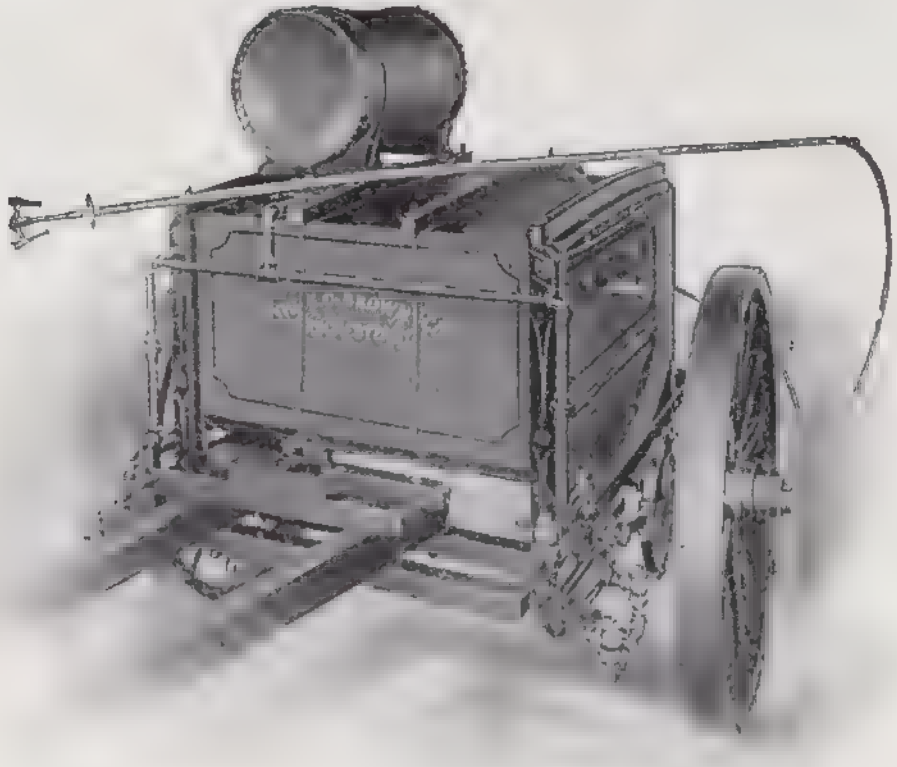

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Traction Power Sprayers

Not only more power, but better sustained and more constant; does better work and the power costs absolutely nothing to generate. Power comes by gearing to wheels of cart, which carries the mixture. Purely automatic in its workings. All you do is to drive. Ideal sprayer for large orchards and field operations, and is quickly and easily changed for use on potatoes, vineyards, etc. We make 40 styles and sizes of the celebrated Auto-Spray—everything from hand atomizers to power rigs. All our goods fully warranted.

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In this department are printed advertisements of arch
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Or one equally beautiful in a different style? Then buy your Plans of me. My designs are Original, Artistic and Economically planned. My Plans and Specifications are Full and Complete. And I can design you *just the house you want*, for the least possible money.

This house is in my **New Book of Bungalows,** 1906. A unique and artistic book, containing designs for one and one and a half story Bungalows in various styles from $1,000 up. Price by mail, $2.

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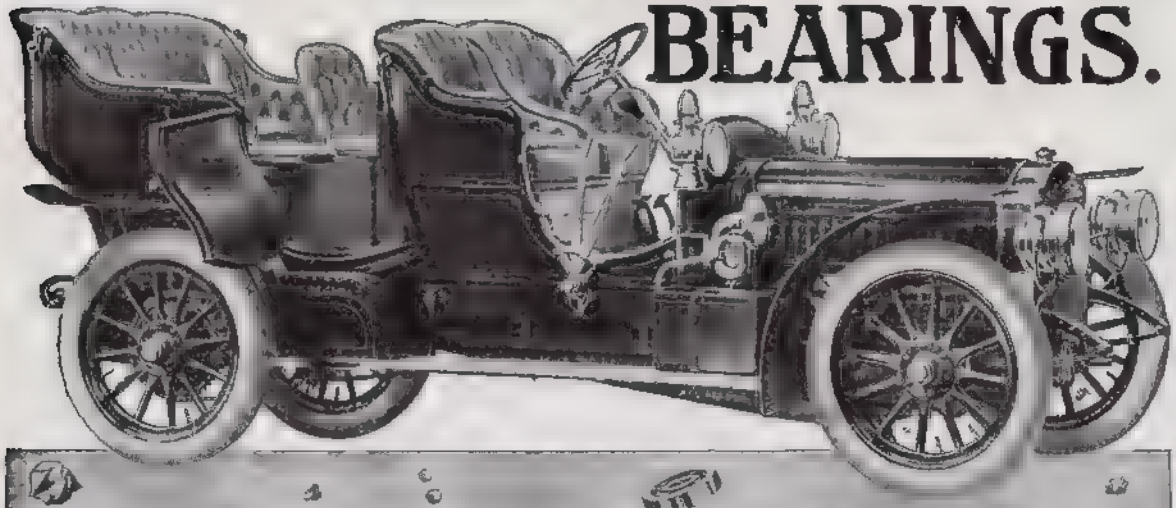

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The Jewels in a watch and the bearings in a motor car exercise practically the same function. One is just as vital as the other. The cheaper the watch the fewer the jewels—the better the car the better the bearings.

Short sighted economy suggests to the automobile manufacturer that he keep the number of expensive bearings down to the minimum Regard for the perfection of his product demands that the number be brought to the maximum.

The efficiency of a car—all other essentials being adequate increases in proportion to the increase of high grade and high priced bearings.

That is one of many points in Thomas Flyer construction in which cost has been utterly ignored. The Thomas contains 19 efficient and expensive bearings.

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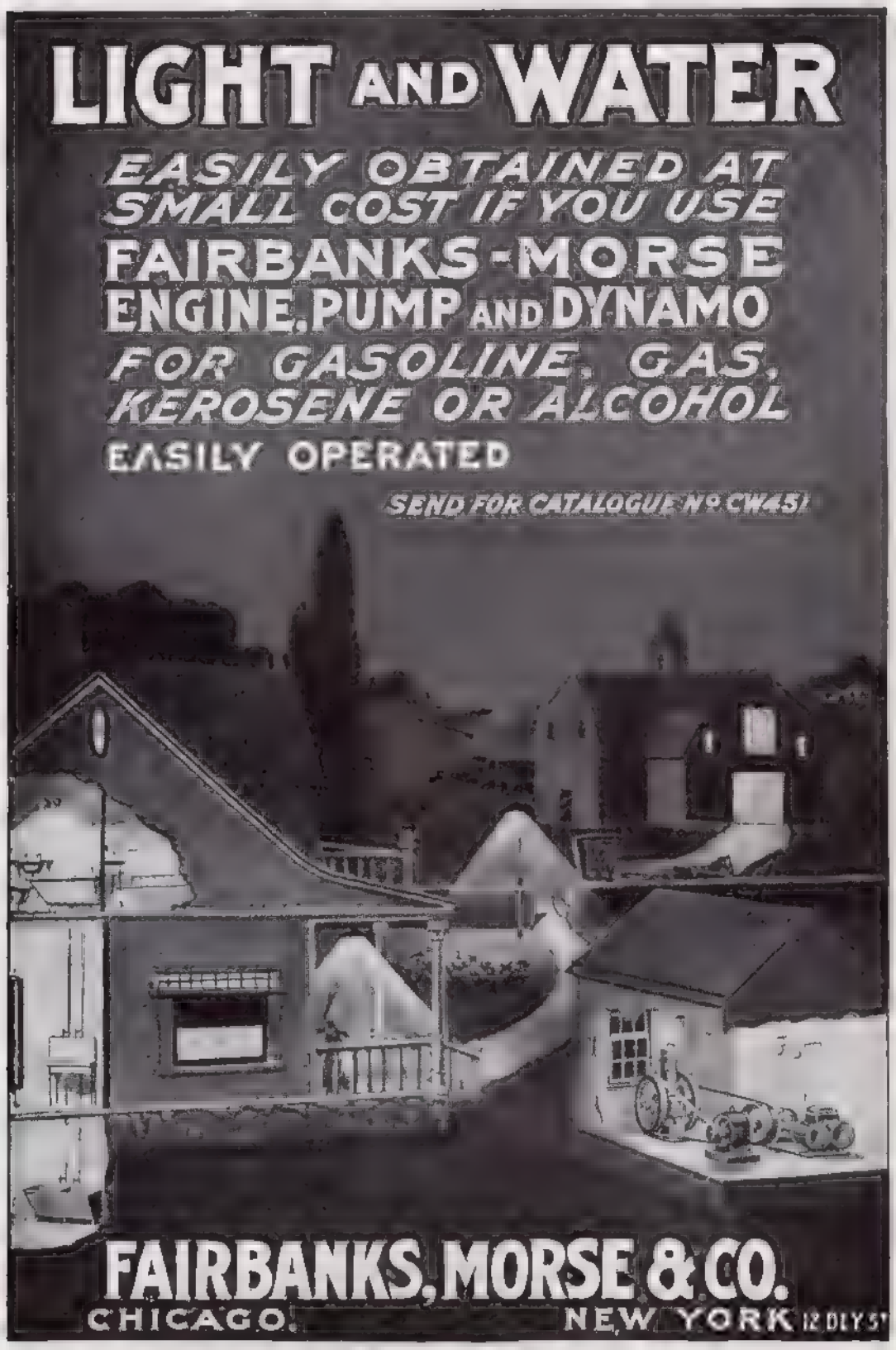
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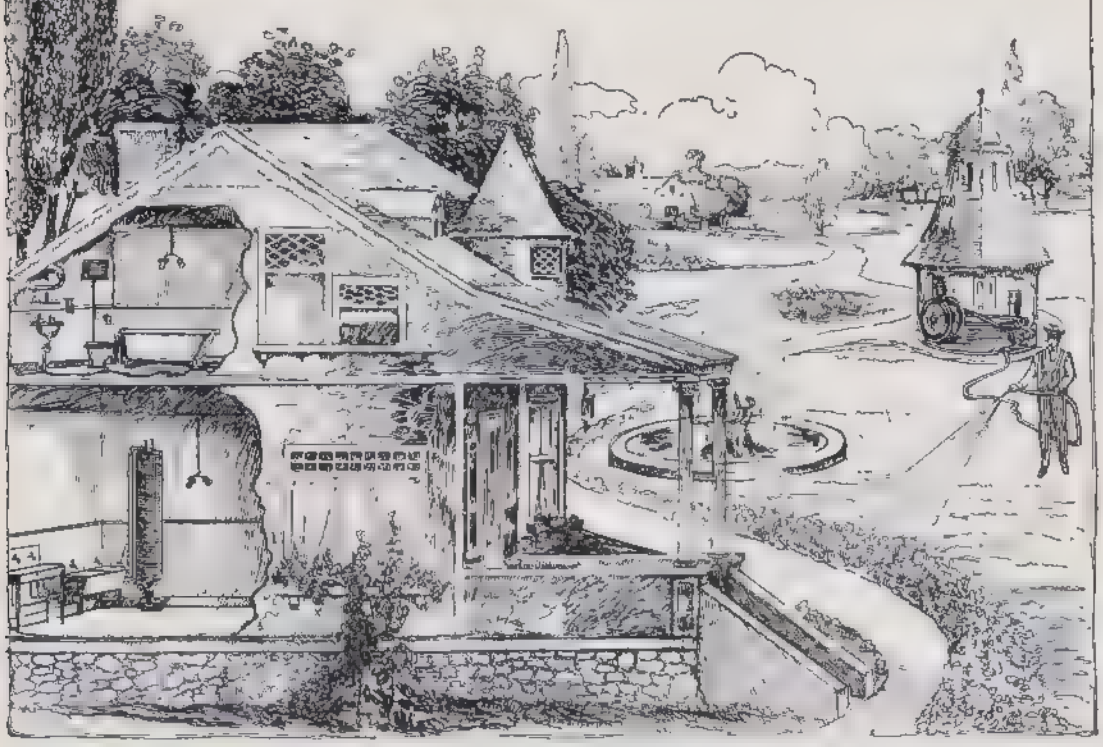

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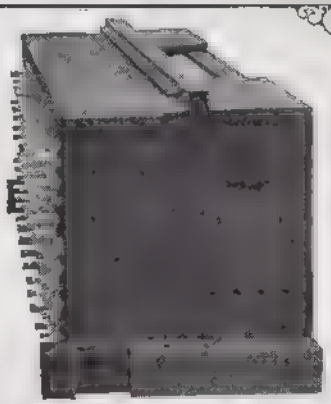
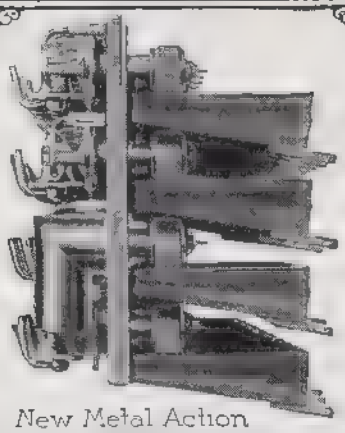
A high-grade upright piano with the famous Metal Action Cecilian Piano Player built inside the case. A Piano that anyone can play without experience or musical knowledge



Old Wooden Action

Not affected by dampness or climatic changes.

The piano par excellence for the summer home or the yacht



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THE Metal Action of the Cecilian Piano Player, which is built into the Farrand-Cecilian Piano is made of steel, brass and phosphor-bronze, and is not affected in any manner by dampness, heat or weather changes of any sort.

The old style *wooden* construction (still used in all other makes of piano players), is peculiarly susceptible to all atmospheric changes, on account of the continued swelling and shrinkage of the wood, and the leakages occasioned thereby necessitate frequent repairs which are both troublesome and expensive.

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THIS is one view of a little of the growing nursery stock on this superb Florida Plantation. 470 acres, 200 under cultivation, 30 acres in groves; balance Orange and other citrous trees, Peaches, Plums, budded Pecans, etc., etc., $150,000 growing. Large 2 story dwelling house, veranda on 4 sides; 3 barns and packing houses, 6 H.-P. engine and power house. Pure water, 13 wells, large cistern and steel tower water tank; 11 tenement houses; horses, mules, cows, implements, vehicles, etc., etc.

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Interested parties address STURGIS COFFIN, 24 MILK STREET, BOSTON, MASS.

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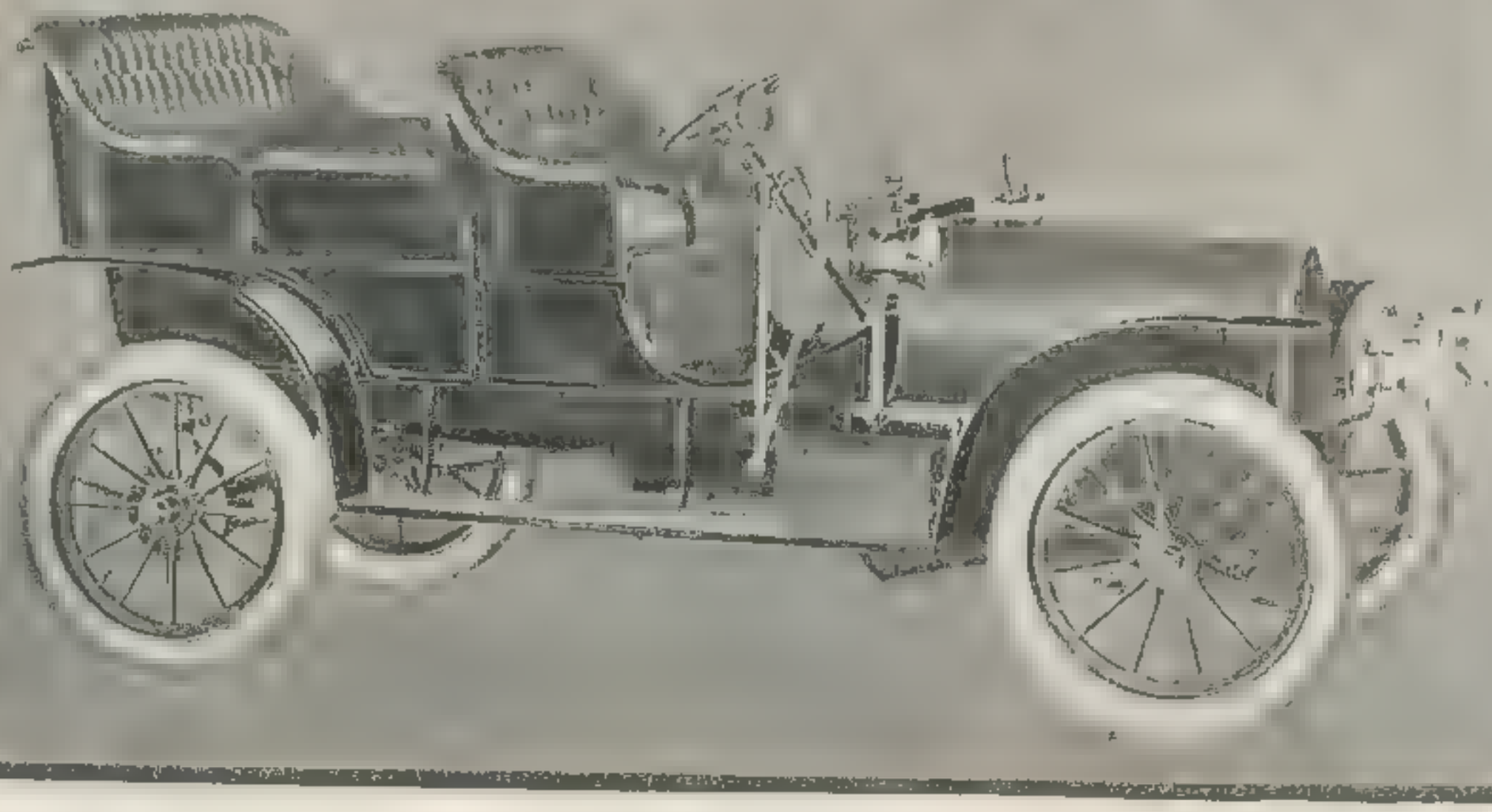

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No other car, at any price, will do as much on American roads as this powerful, economical, and luxuriously comfortable car.

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The handsomest and most practical motor-book ever published—send for it today. It may prevent you from making a serious mistake.

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The full motor efficiency is always at hand, and always available; which gives the car greater ability under all circumstances than any other "30 horse-power" car; and equal ability on American roads with any car of any power or price.

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In luxury of appointments and refined beauty of design it satisfies the most exacting taste.

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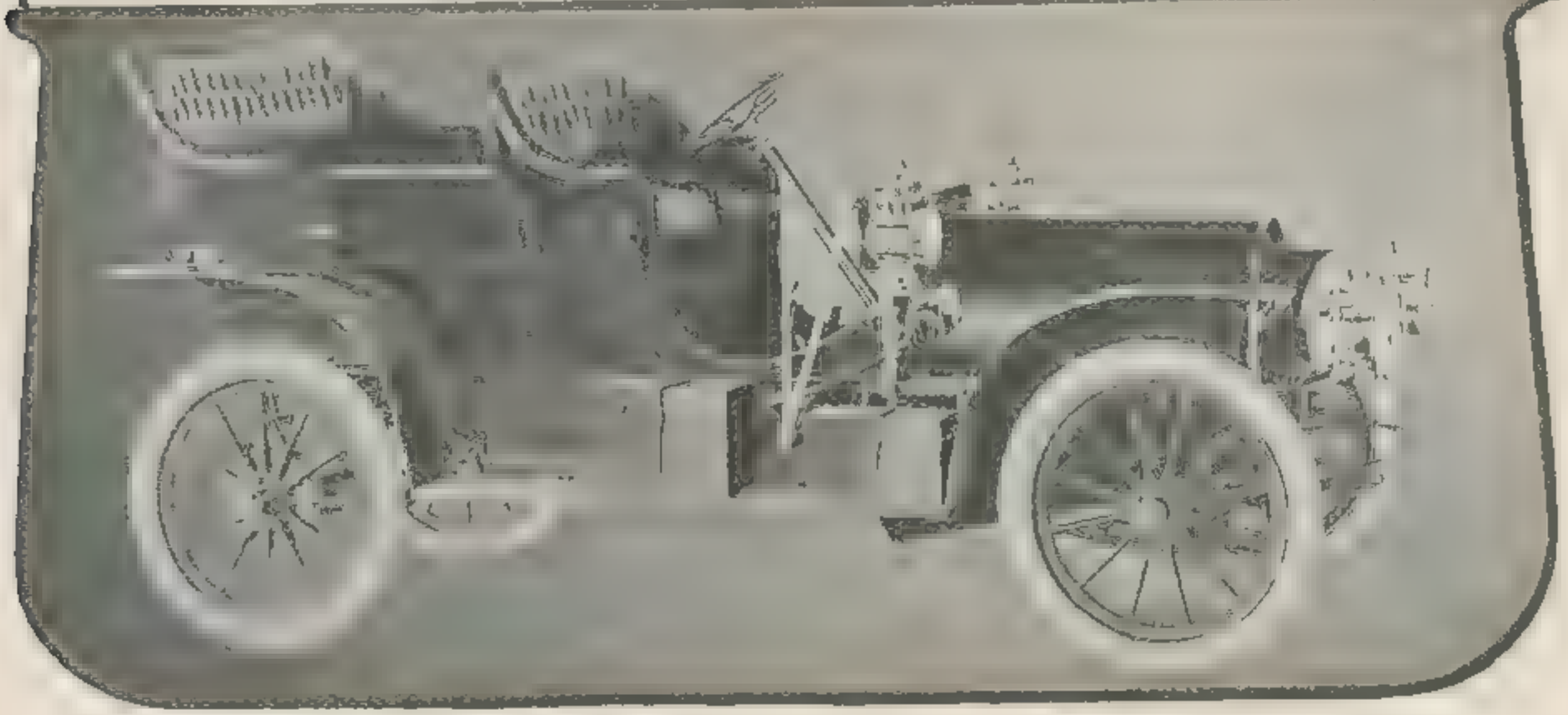

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The Best Automobile

One Model 45 Horse Power

"The best automobile." Somehow it seems presumptuous to even think of claiming that; but we honestly believe that we make that car—and with good reason, as you shall see—so why not say it?

Furthermore, we can make you believe that very thing too, if you get close enough to our product and our ways of producing it.

We use the best materials from all parts of the world. We put 2,100 hours' labor in finishing alone—10 months of working days—by American mechanists, not "cheap labor."

We follow accepted practice in form, the design refined to the utmost of simplicity—not one bolt an "afterthought."

By what process could any maker anywhere produce a better car? Where is another so made?

After producing this car we figured the cost and selling price. We were pleased to find that the duties and excessive commissions on our only competitors make our charge—$4,250—barely half the cost of any foreign car that makes a comparison possible.

We seek communication with those who will appreciate this car. For such it will give a service greater than any other mechanism the world has produced. Shall we send our book of details?

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Here's the Proof

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Stearns stock cars entered and won three events in the Decoration Day Hill Climbing Contest of the Cleveland Auto Club. The Stearns won these same events last year.

One mile, rough winding hill, rising 330 feet.

1st—With Full Equipment," cleaned up all comers," including three machines prominent in all American racing. Time, 1 minute 40 seconds.

2nd Touring cars stripped, same perfect record. Time, 1 minute 24 2-5 seconds.

3rd—"Free for all," our stripped stock car against special racers. Some, we understand, being candidates for the greatest race of the year, we won again in Record Time, viz: 1 minute 23 2-5 seconds. The next best time being slower than our time in the second event mentioned.

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Cleveland, 2135 Euclid Ave., Cleveland, O.
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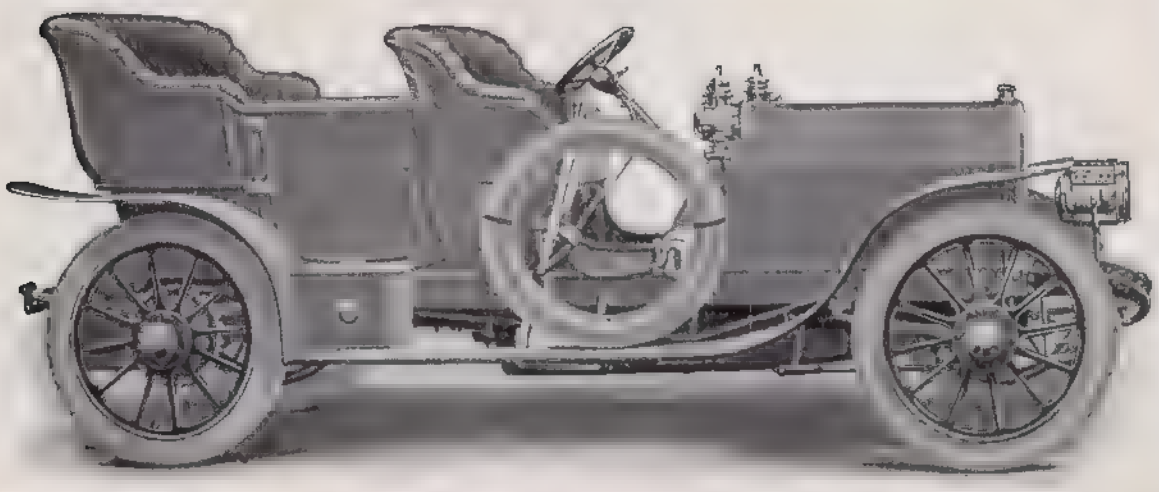

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And other house plants of superior quality.

Beautiful Specimen Boston Ferns at 50c and 75c up to $5.00 each, according to size. All *guaranteed* healthy, hardy, and growing.

AS we are the largest growers in the West and supply Decorative Ferns, Palms and Potted Plants to even the large nurseries, we can afford to *supply you direct* at the lowest figures. You will save largely by ordering from us and making inquiries regarding your wants. Satisfaction guaranteed or money refunded.

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Boston Ferns, 5 in. strong, 35c each; 6 in. strong, 75c each; 7 in. strong, $1.25 each
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Phoenix Canariensis, fine bushy plants, just the thing for vases, lawn decorations, etc., 10 in. pots, $4.00 each. Large specimens, $25.00 to $30 each. 5. in pots, 75c each
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Vinca Minor or Grove Myrtle, a large stock in fine shape, 2½ in., 50c a doz.

We ship Cut Flowers to any part of the country. Better values than elsewhere.

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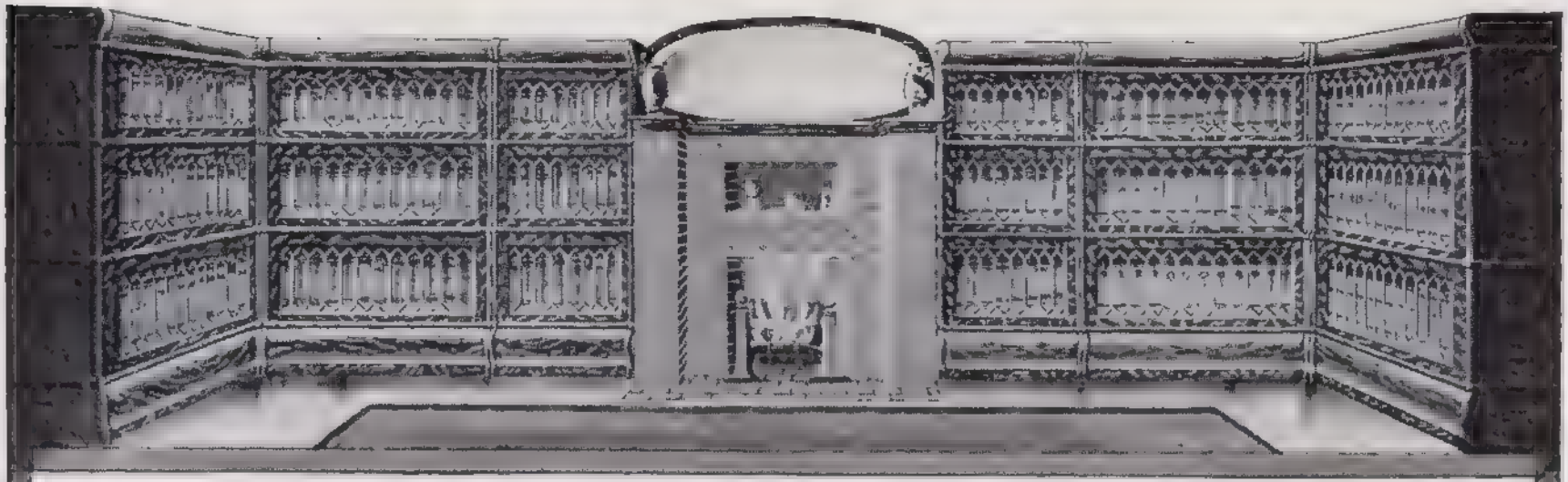

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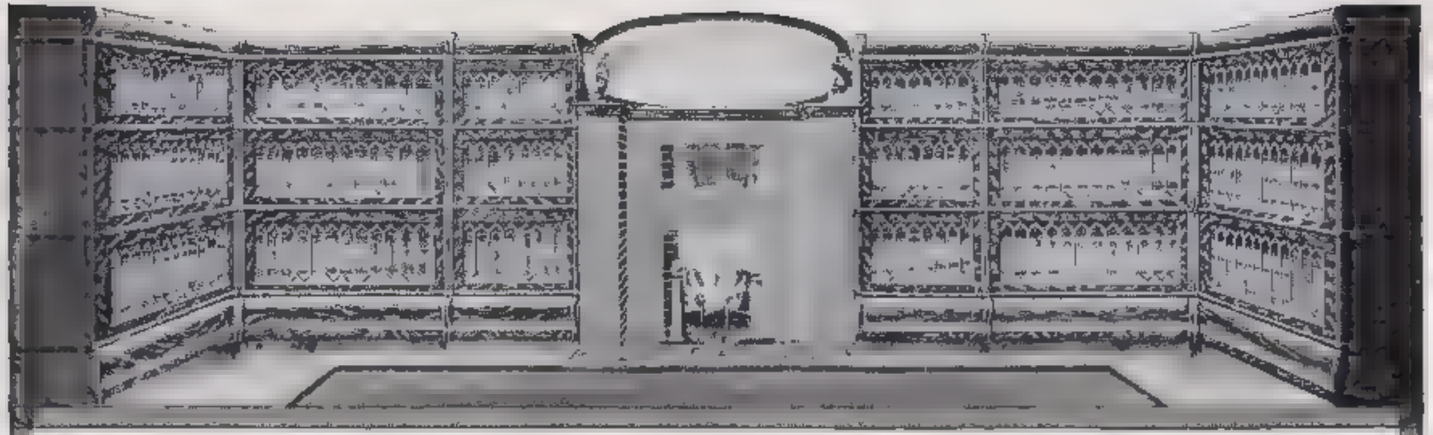

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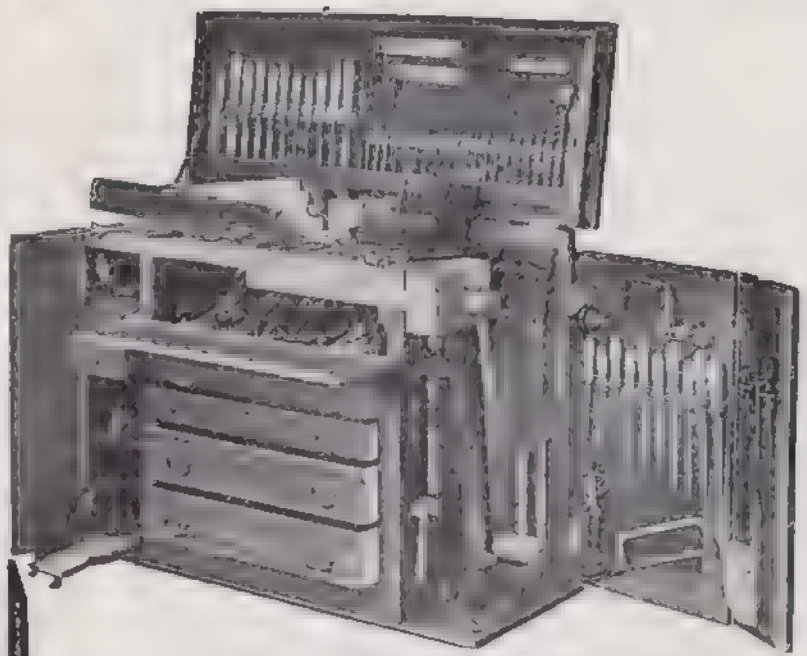

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Our prices are f. o. b. New York, giving the best tools made (instead of cheap tools, and paying the freight).

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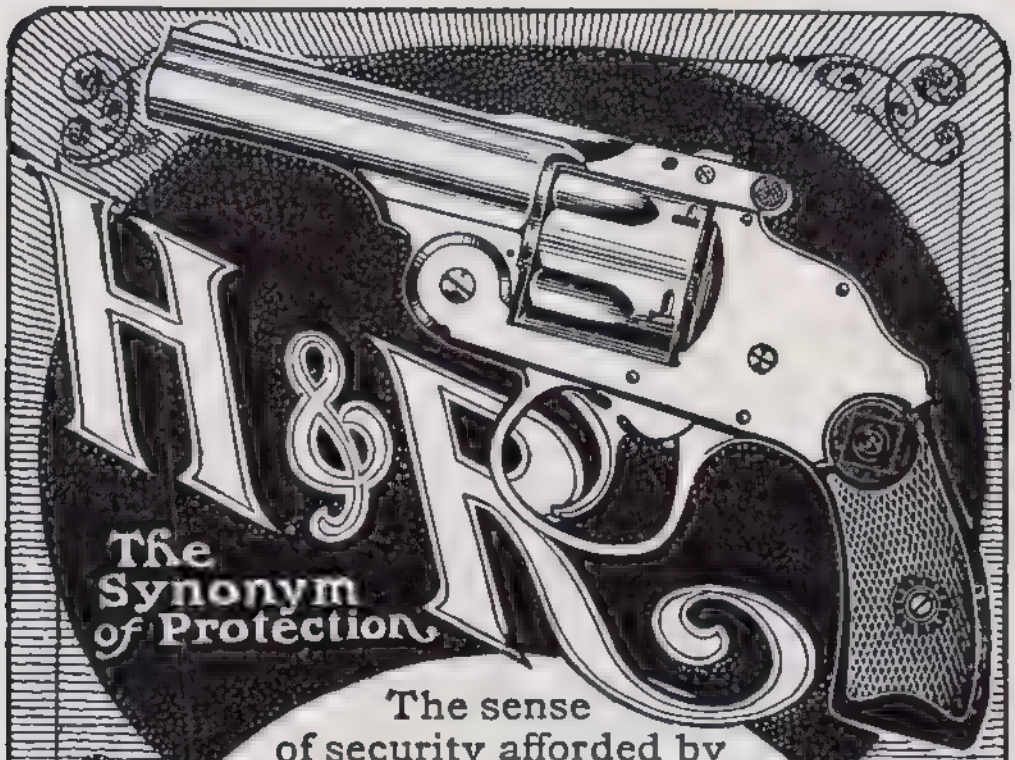

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The Car of Many Exclusive Features

The Haynes has many exclusive features that assure for it a wonderfully low maintenance and up-keep expense. In a 6,000 mile trip, made in early winter, from Kokomo, Ind., to New York and Boston via Albany, returning over the Allegheny Mountains by the National Road, the repair expense was but $1.50.

Roller bearings throughout make the loss of power between the motors and rear tires less than 10 per cent., and account for the ease with which the car went up the longest and steepest grades in crossing the mountains.

The Haynes exclusively has roller-bearing engines; a Master Clutch with no wearable surfaces, which takes hold without jerking; a transmission that positively prevents burring and stripping of gears; and a roller pinion and rear axle that overcome every objection to shaft-driven cars.

Other exclusive Haynes features are given in our new catalogue. For prompt attention address Desk 12.

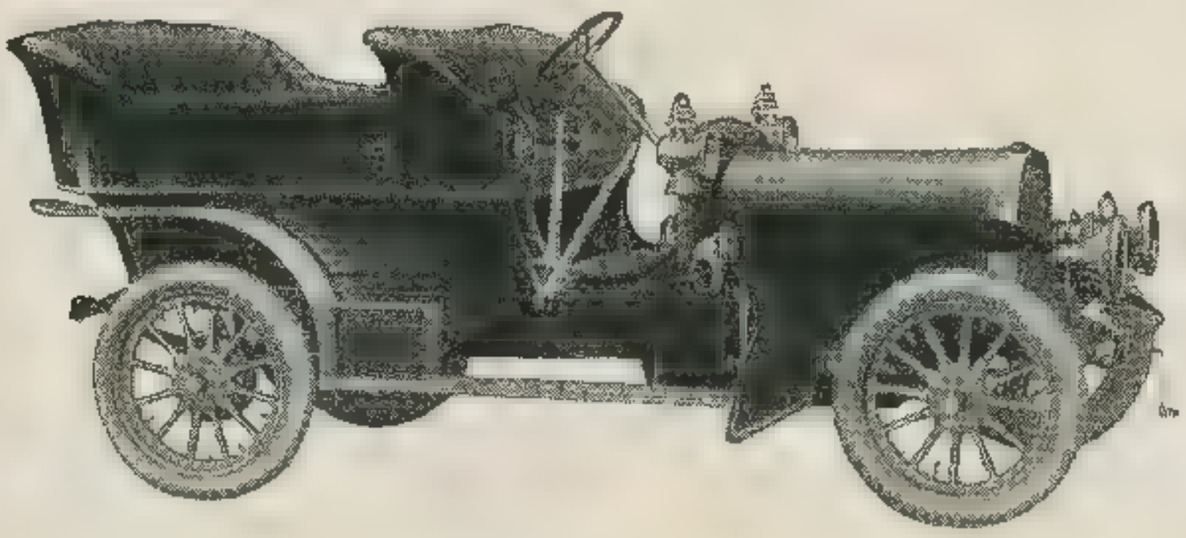
"The Car the Repairman Seldom Sees."

HAYNES AUTOMOBILE CO.

KOKOMO, IND.

Chicago, 1421 Michigan Ave. **New York, 1715 Broadway.**

MEMBERS A. L. A. M.



Model "R" Four-Cylinder Touring Car.

Vertical roller-bearing engines. Cylinders cast separately, 5⅛x6 inches, 50 H. P. An exclusive transmission that absolutely prevents stripping of gears. Positive cooling system. Individual and special lubrication. Master Clutch has metal faces and takes hold without jerking. Shaft drive. Exclusive universal joints that prevent wear on pins. Sprocket and Roller Pinion and perfect Rear Axle, all exclusive. Roller bearings throughout. 108-inch wheel base, 54-inch tonneau, seating five people. Four to 60 miles an hour on high gear. Weight, 2,750 pounds. Price, $3,500, f. o. b. Kokomo. Full equipment.

Model "O" Four-Cylinder Touring Car.

Cylinders cast in pairs, 4¼x5 inches, 28 to 30 H. P. Transmission, cooling system, lubrication, master clutch, shaft drive, universal joints, sprocket, roller pinion and roller-bearings and body same as on Model "R." 97-inch wheel base. 4-inch tires. Tonneau seating three persons. Four to 40 miles an hour on high speed. Price $2,250, f. o. b. Kokomo. Full equipment.

HAYNES A Car of Style

The body used on Models 'O' and 'R'—1906 Haynes was designed by a famous Parisian bodymaker. When the two cars were in New York, Boston and Philadelphia, last fall, they were frequently mistaken for foreign built machines.

The only two models offered for this year have all the little details that add so much to beauty, convenience and luxury. Nothing is found wanting. The lines are graceful and the finish is as rich as it is possible to produce.

But in addition to being a car of great beauty, it is also a car of great comfort, endurance and reliability. It is as dependable as the old family horse, rarely out of order and always easy to manage.

Haynes care in construction, in selection of materials and finish, is responsible for this and makes it the car of small cost for repairs and up-keep. These points can be proved by demonstration by any agent handling the Haynes.

When sending for catalogue address Desk J2 for prompt attention.

"THE CAR THE REPAIR MAN SELDOM SEES."

NEW YORK:
1715 Broadway

HAYNES AUTOMOBILE CO., Kokomo, Ind.

(Oldest Automobile Manufacturers in America) Members A. L. A. M.

CHICAGO:
1420 Michigan Ave.

Model "R" Four-Cylinder Touring Car.

Vertical roller-bearing engines. Cylinders cast separately, 5⅛x6 inches, 50 H. P. An exclusive transmission that absolutely prevents stripping of gears. Positive cooling system. Individual and special lubrication. Master Clutch has metal faces and takes hold without jerking. Shaft drive. Exclusive universal joints that prevent wear on pins. Sprocket and Roller Pinion and perfect Rear Axle, all exclusive. Roller bearings throughout. 108-inch wheel base, 54-inch tonneau, seating five people. Four to 60 miles an hour on high gear. Weight, 2,750 pounds. Price, $3,500 f. o. b. Kokomo. Full equipment.

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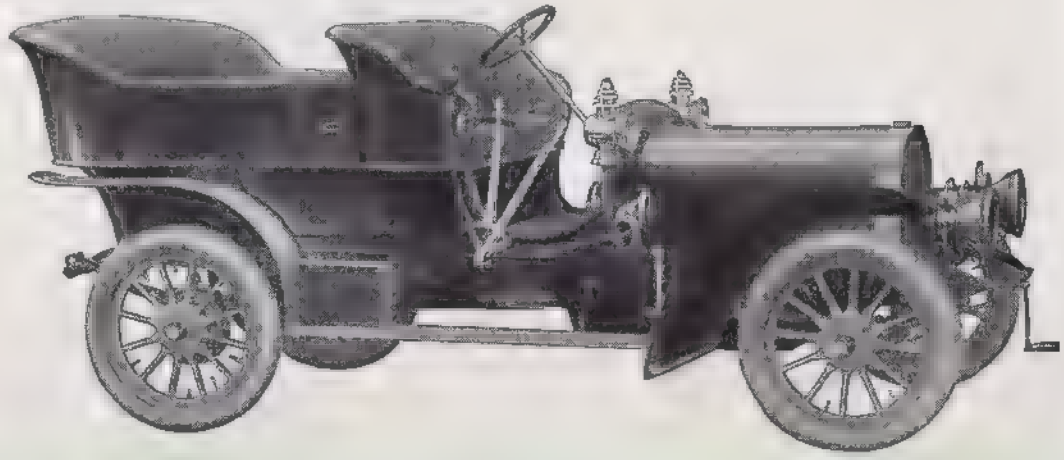
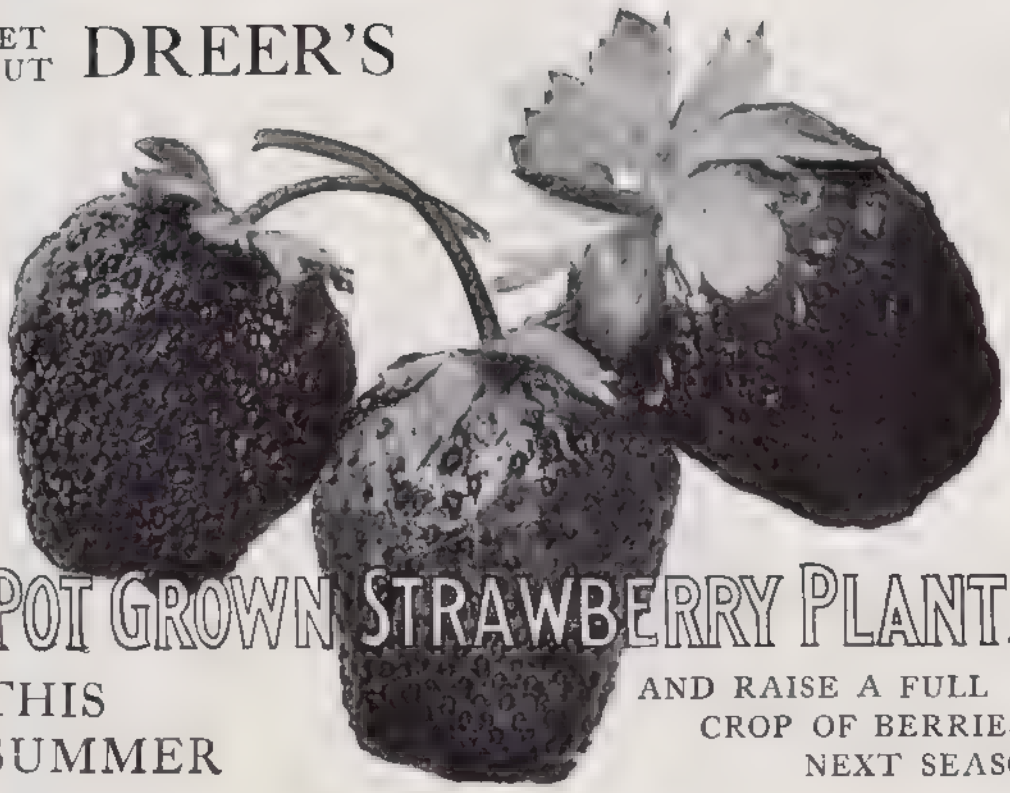


SET OUT DREER'S



POT GROWN STRAWBERRY PLANTS

THIS SUMMER

AND RAISE A FULL CROP OF BERRIES NEXT SEASON

Dreer's

Mid-Summer Catalogue

Gives information about best methods of planting and tells of the latest and best varieties of Strawberries which we furnish in strong pot-grown plants, also offers Celery, Cabbage and other vegetable plants together with a select list of Palms, Ferns and decorative plants. Seeds of old-fashioned Hardy Perennials and other flowers for present sowing. Lawn Mowers and Garden Tools of all kinds. Write at once for a copy—FREE, and please mention this magazine.

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Horticultural Directory

Information about trees, shrubs, flowers, plants, etc., will be furnished upon request, Address HORTICULTURAL DEPARTMENT, 133-137 East 16th Street, New York.

FINE EVERGREENS FOR AUGUST PLANTING

The best time to plant evergreens is August, when the ground is warm and moist. The reason for this is that the leaves of evergreen trees have to be supplied with sap every day in the year. Therefore they should be planted when the sap is running freely. Summer drouths or winter colds dry the resinous life-blood of the evergreen and kills it.

We are prepared to plant specimen trees of all kinds of evergreens. Such trees, we believe, cannot be procured elsewhere in the country, for nowhere do they receive such care and preparation. The trees we plant are first kept in our nursery for several years; they are frequently transplanted and root-pruned. Each tree is allowed 64 square feet of growing space. We discard all stunted and unsymmetrical trees.

Our stock always comprises the rarest European and Japanese varieties, as well as the domestic, and is composed mainly of trees for immediate effect. Write for booklet showing grounds we have planted.

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For Garden Culture

All carefully selected 2-year-old field-grown stock that will produce a full crop of flowers this year. In our GARDEN BOOK we offer over 150 of the choicest Hybrid Perpetual, Hybrid Tea, Tea, Moss, Sweet Brier, Climbing and other Roses. We especially recommend our collections as under:

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Anna de Diesbach, Baron de Bonstettin, Baroness Rothschild, Gen Jacqueminot, Gloire Lyonnaise, Magna Charta, Margaret Dickson, Mrs. Crawford, Mrs. Laing, Paul Neyron Prince Camille de Rohan, Ulrich Brunner. Price $4.00 per doz., strong 2-year-old.

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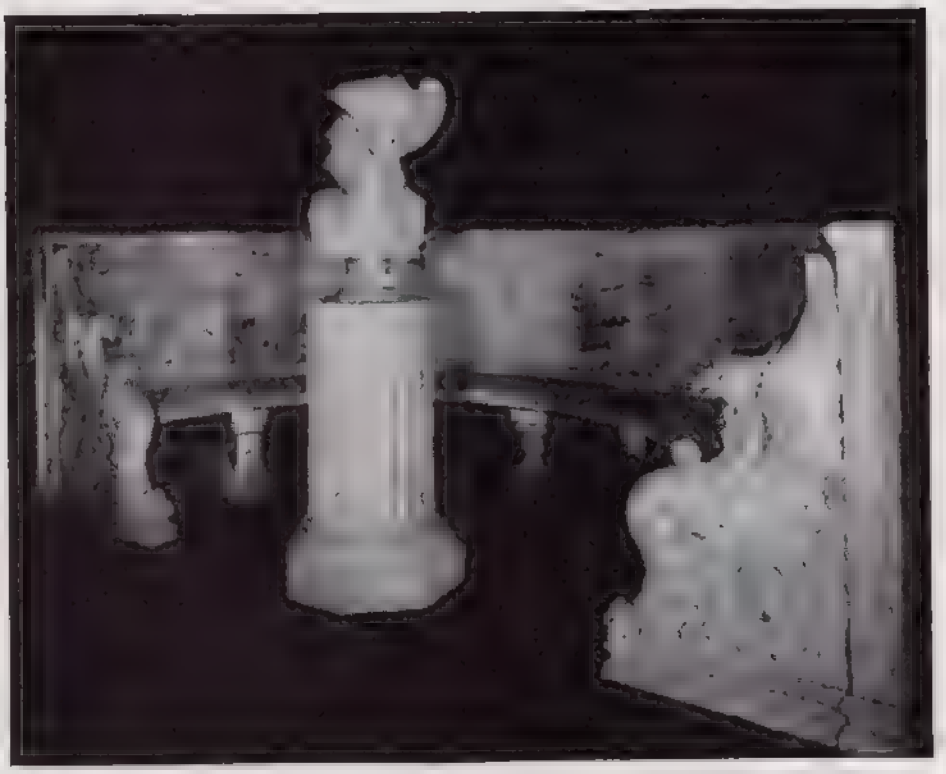
Killarney, Belle Siebrecht. Bessie Brown, Cap. Christy, Caroline Testout, Ideal, Kaiserin Augusta Victoria, La France, Souv. de Wootten, Gruss an Teplitz, Helen Gould, Viscountess Folkestone. Price $5.00 per doz., strong 2-year-old.

All are fully described in our GARDEN BOOK which is acknowledged to be the finest and most complete catalogue of Seeds, Plants and Bulbs published. A copy will be sent *FREE* to those who mention this magazine.

HENRY A. DREER, 714 Chestnut St., Philadelphia, Pa.



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Fountains, Statuary, Columns, Pergolas, Balustrades, Standards, Sun Dials, Pedestals, Benches, Tables, Vases, Lions, Sphynxes, etc., in Marble, Bronze, Stone, and Pompeian Stone that successfully withstands the American weather.

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A DIRECT REPRODUCTION FROM
ORIGINAL IN THE VATICAN

Pompeian Stone, height 46 in. Price, $65.00
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FOR BEST RESULTS

Plant Evergreens in August

Japanese Evergreens for formal gardens, have stood two or more years in my nursery and are absolutely hardy.

(Send for illustrated booklet)

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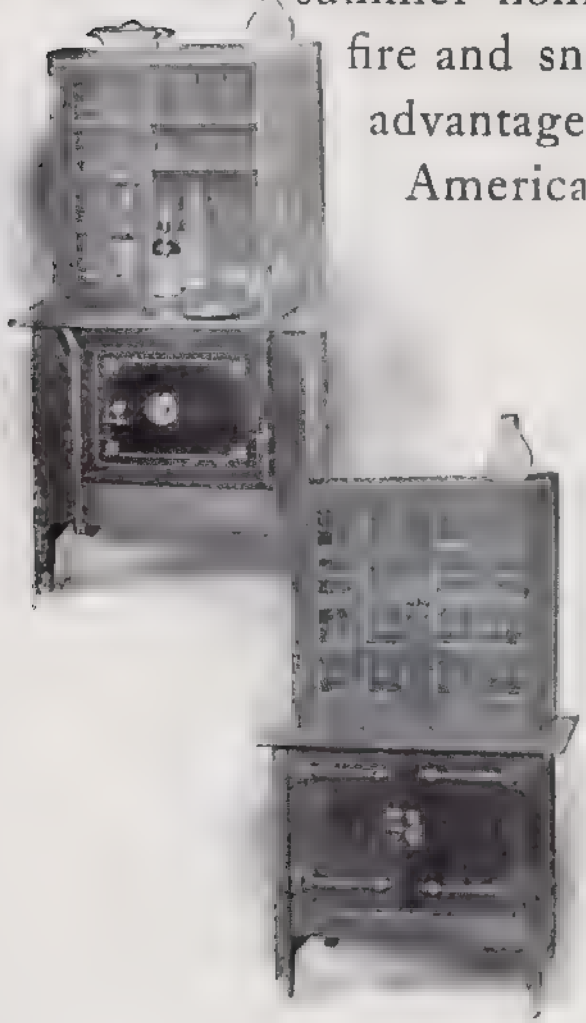
A FIREPROOF, modern steel safe concealed in the graceful lines of an artistically designed piece of furniture. Provides an absolutely safe receptacle for jewels, plate, valuable papers, etc. The introduction of "Safecraft" into your summer home adds security against fire and sneak thieves to the other advantages of Country Life in America.



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Wine Cabinets
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Serving Tables, etc.

Each piece perfectly practical for its particular use.

Prices from $60 up

Write for Catalogue L showing photographs of the various pieces with prices and full descriptions. Address "Safecraft" Dept

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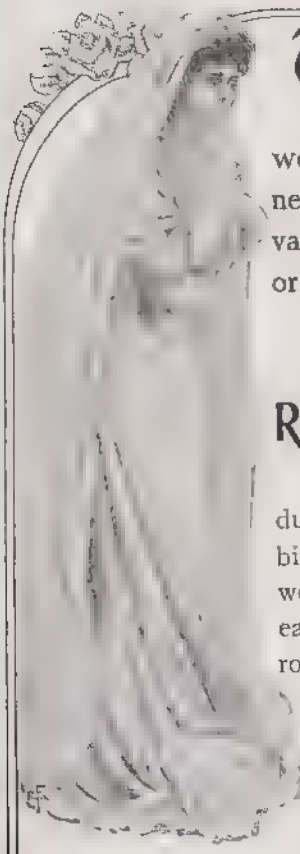
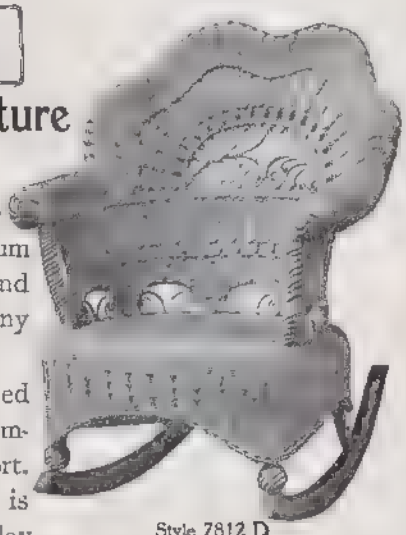


The Best Gift of All

Whether she be bride or matron, young or old, every woman appreciates any article which enhances the attractiveness of the home; if at the same time the gift is a useful one its value is doubled. The best gift of all for bride, wife, mother, or anyone else dear to you is

Heywood-Wakefield
TRADE MARK

Reed and Rattan Furniture



Style 7812 D

It is attractive, light, sanitary, durable and comfortable. It combines maximum strength with minimum weight. It can be easily cleaned and easily moved. It can be used in any room.

This furniture is especially adapted for use in summer homes. It imparts an air of coolness and comfort. The rattan of which it is made is the finest grade grown in the Malay Jungles. Our own representatives make selections for us and ship them direct to our factories. These rattans are split into the long, smooth and pliable reeds and are then woven by hand into the designs shown in our catalogues.

We can finish this furniture in any shade, to harmonize with other furnishings. Those pieces enameled in white or the delicate colors, with gold leaf trimmings, are most decorative and at the same time are quite as serviceable as those less pretentious. They are ideal as gifts.

Ask the dealer to show you the newest patterns in this popular furniture. Insist on seeing the little white tag ☞ Heywood-Wakefield It is the guarantee of superior workmanship, material and durability. Accept no substitute, but write at once to our nearest warehouse, giving the name of the dealer you would prefer to patronize and we will tell you how to order through him. Let us know which of these catalogues interests you and we will forward it by return mail.

7854 A

7858 D

Book G, Reed and Rattan Furniture

Book 7, Go-Carts and Baby Carriages

HEYWOOD BROTHERS and WAKEFIELD COMPANY

New York Boston Buffalo Philadelphia Baltimore Chicago San Francisco Los Angeles Portland, Ore.
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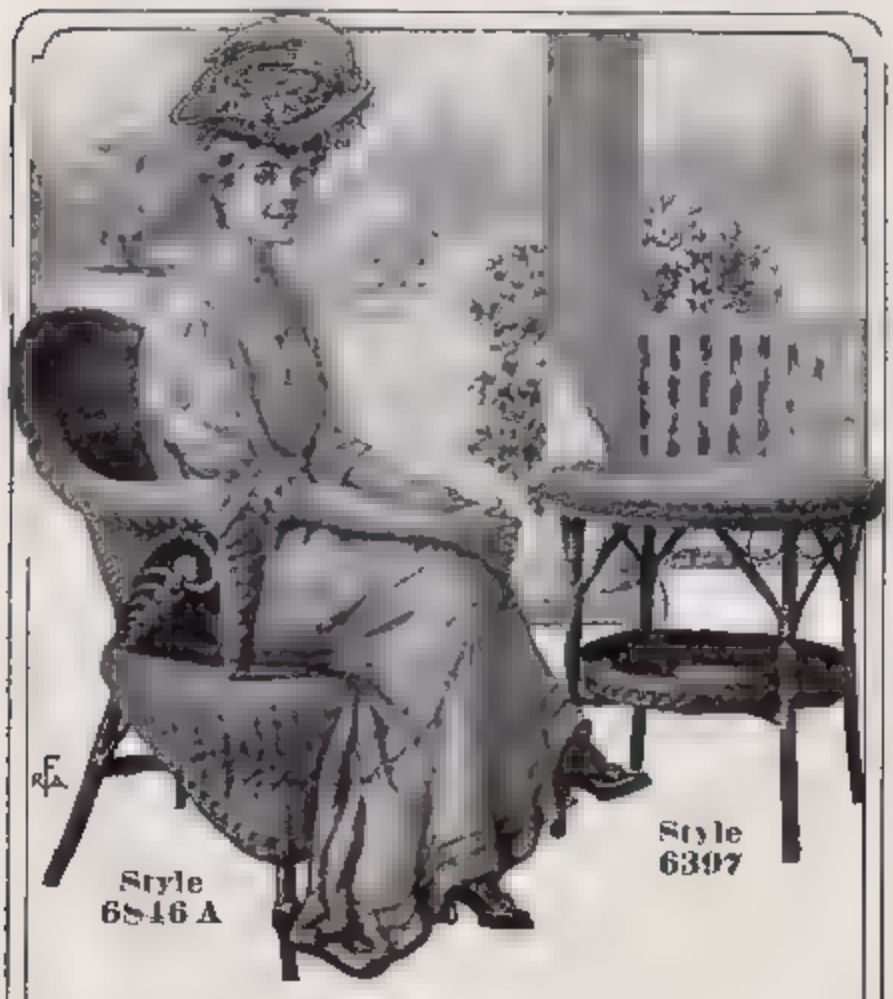

"The Favored Chair No Matter Where"

At the club house, on the hotel piazza, or on your own porch, you will notice that the favorite chair—the one most used, the one you instinctively offer to guests, is the

Heywood-Wakefield
TRADE MARK

The secret lies in the fact that the chair is comfortable it is artistic in design, and serviceable. It can be moved to the favorite nook with ease light but strong. It is made by the largest manufacturers of reed and rattan furniture in the world. It will lend your porch that air of refinement and good taste which no other furniture can give. It is made of the finest reed, produced by skilled labor. If you want to be sure of getting the best see that it bears the little white tag: [Heywood-Wakefield]

It is the guarantee of superior workmanship, material and durability. Accept no substitute, but write at once to our nearest warehouse, giving the name of the dealer you would prefer to patronize, and we will tell you how to order through him. Let us know which of these catalogues interest you, and we will forward it by return mail.

Book G.—Reed and Rattan Furniture.
Book 7.—Go-Carts and Baby Carriages.

Style 7852 D

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Hiawatha Sparkling Spring Water

has received the highest awards over all other table waters where it has been entered in competition.

This is positive proof of its absolute superiority. You will realize why Hiawatha is better than other waters once you drink it. Order a case today and test the goodness, purity and wholesomeness of Hiawatha on your own table.

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Order Hiawatha Today

Sold by leading hotels, cafes, restaurants, grocers and druggists. The booklet, "It's What's Inside," gives many pleasing recipes for serving Hiawatha in the home. It is sent free on request.

LOUIS M. PARK COMPANY.

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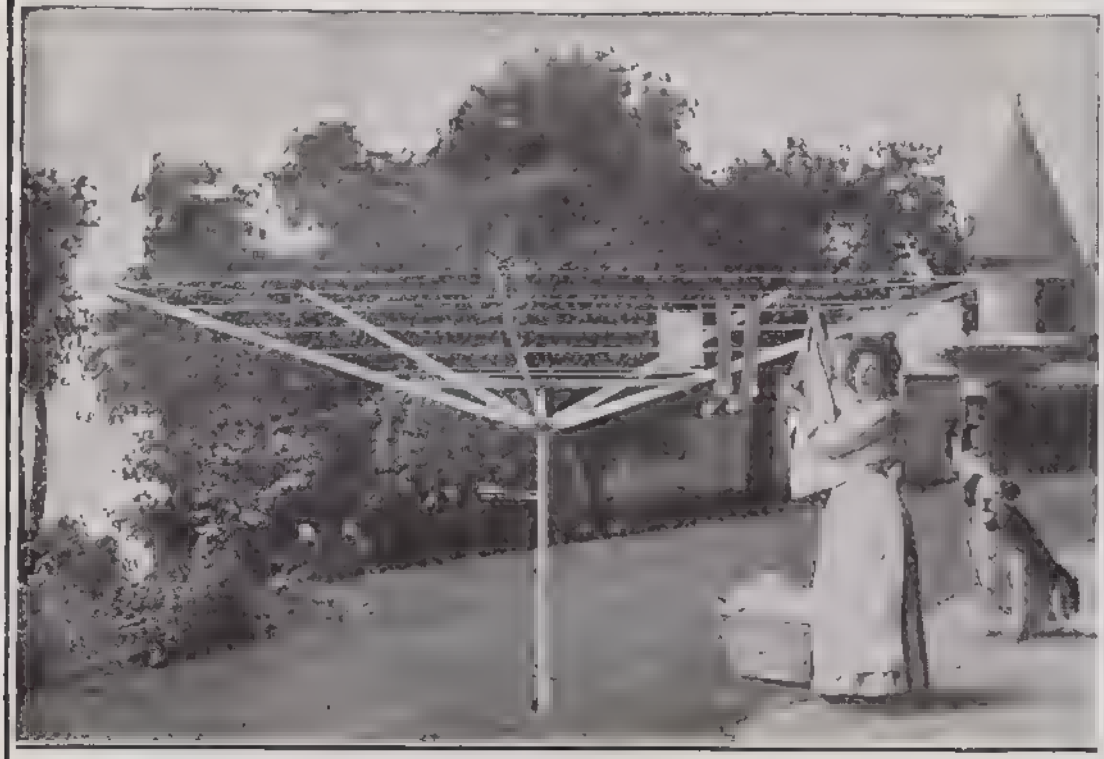

BEAUTIFUL LAWNS

Are the pride of the home; why disfigure with ugly CLOTHES POSTS?

HILL'S LAWN CLOTHES DRYERS

hold 100 to 150 feet of line, take small space, quickly removed when not in use. Make a neat and tasty appearance, last a lifetime. **MORE THAN 2 MILLION PEOPLE USE THEM.** No traveling in wet grass. No snow to shovel. The line comes to you. Also **Balcony and Roof Clothes Dryers.** If not found at your hardware store write

HILL DRYER COMPANY

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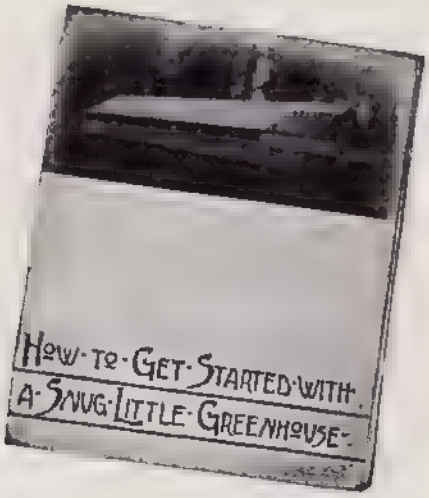
Write for Catalogue C. L. WORCESTER, MASS.

H AND C

THE UNIT GREENHOUSE



A Greenhouse built in sections—Add to it as you wish, just as you would to a Sectional Bookcase.

SO SIMPLE—it brings the greenhouse question down to a practical, intelligent basis. Start your greenhouse plans with a simple, single compartment affair 25 feet long and 18 feet wide. Add to it by sections just as you want to, and before you know it yours is a big, full fledged greenhouse the building of which by sections makes the investment a very easy one. You see a section of a greenhouse measures 8 feet 4 inches wide, costing so much per section, according to material, each unit then will stand for a certain cost, and you figure additions accordingly.

There is no need of waiting until you have saved for a big greenhouse, which perhaps you couldn't have for years, while by our unit system of building you can start right now with your first compartment, add the units, so joining them, to fit your grounds to the best advantage.

Everyone who has a home and garden should have one of our interesting little booklets. *"How to Get Started with a Snug Little Greenhouse."* It tells all about our Unit System, describes the economy and convenience of this form of greenhouse, besides giving many interesting points which you want to know. *Write for Edition S.*

HITCHINGS AND COMPANY

GREENHOUSE DESIGNERS AND BUILDERS

Manufacturers of Heating and Ventilating Apparatus

1170 BROADWAY, NEW YORK

H AND C

Window Gardens

with ventilating apparatus and all the growing essentials of a greenhouse. Owing to a large demand for a mechanically practical window garden we have just designed this window garden which is really a miniature conservatory!

Do you know that with a window garden of this kind you can supply your house with cut flowers all winter? You can have flowers in a score of varieties from Christmas to Easter. Think of having Tulips, Hyacinths, Daffodils, Azaleas, Cyclamen, Cinerarias, Primroses, Hydrangeas, Oranges. clambering vines such as Smilax and Nasturtiums, and other plants in a riot of bloom.

In winter and early spring flower and vegetable seeds can be started as in a greenhouse, which, when planted out will give you results weeks earlier than if you waited to sow seed in the open ground. You can also revive in it your dying plants that are doing service in your living room. A stove is not even necessary for heating as the heat of the house is sufficient in ordinary weather, and in severe weather a small lamp provides the necessary warmth.

This window garden is, in effect, a small conservatory, and will give distinction and uniqueness to your home. It is portable and can be attached to or removed from a rented house.

The regular stock size we have made measures 5 feet long, 2 feet 6 inches wide, 6 feet 6 inches high, and will fit any standard window.

PRICE $42.50

f. o. b. FACTORY

The above price includes weather strips, supporting brackets, and is complete in every detail for erecting. It is shipped in "knock-down" shape and can be easily attached by your local carpenter or any handy man. Estimates on special sizes for large windows sent on request. Illustrated pamphlet with detailed description sent for the asking.

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DRY, COOL, INVIGORATING
CLIMATE, PURE WATER

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SCENERY OF UNSURPASSING BEAUTY

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Address RESORT DEPARTMENT, COUNTRY LIFE IN AMERICA, 133-137 East 16th Street, New York.

HOTEL PRESTON
BEACH BLUFF MASS.

A PICTURESQUE LOCATION

Directly on the Ocean with an Ancient Colonial Background

WITH well-considered appointments that count for comfort and enjoyment; with surroundings unrivaled for combined beauty of ocean and land and with an environment that is socially select and historically interesting, the HOTEL PRESTON is far and away the ideal resort on the famous North Shore.

BOSTON is but half an hour away by rail, and ancient Salem, Marblehead, Swampscott and Danvers within easy driving or automobile distance over superb roads

WITHIN a short walk from the hotel are TWO EXCELLENT GOLF COURSES The Clifton Course and the TEDESCO Country Club—on both of which guests of the Hotel Preston are admitted upon the payment of reasonable fees. OCEAN BATHING on one of the best beaches on the Massachusetts Coast—directly in front of the hotel.

LOVERS of deep-sea FISHING will find the sport remarkably fine throughout the hotel's season. There is also an AUTOMOBILE GARAGE with modern facilities and well-equipped livery adjacent to the hotel. MUSIC by an orchestra of Boston Symphony men at regular morning and evening concerts

H. W. PRIEST, *Proprietor*,

HOTEL PRESTON, -:- Beach Bluff, Mass.

HOTEL PRESTON
Open
From June 15th
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NEW CASTLE · PORTSMOUTH · NEW HAMPSHIRE

No hotel on the New England coast is more notable in the beauty of its location, the attractiveness of surroundings and perfection of service than the

HOTEL WENTWORTH

Located on the sea, in the center of a large private park at New Castle, three miles from Portsmouth, New Hampshire.

Selected by the U. S. Government because of its attractive features for the meeting of the Russian-Japanese Peace Conference.

Every facility for sport and recreation. Fine golf course, yachting, fishing, still and surf bathing and well equipped garage under competent supervision. Music by symphony orchestra. Accommodates 450. Opens last week in June. Send today for a beautifully illustrated book.

WENTWORTH HOTEL COMPANY

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Are You Sure Your Vinegar is Pure?

In no other article that goes on the table is there so much dangerous adulteration as in ordinary vinegar.

And yet the amount of vinegar used in any one home is so small that every family can afford the finest vinegar made.

HEINZ Pure Malt Vinegar

—the only vinegar of this kind made in the United States—is without question the purest, most delicious, most healthful vinegar that can be produced. Indeed, it is recognized as the standard by the Government pure-food authorities.

Brewed from selected barley malt by a most exact process, it combines with all the healthful properties of the grain a flavor of rare pungency that makes it invaluable for salads and table uses.

Your grocer sells Heinz Pure Malt Vinegar in sealed bottles. Include a bottle in your next order; if it isn't the finest that ever came to your table the grocer will refund your money.

Others of the 57 Varieties that are sure to captivate you are Baked Beans (three kinds), Preserved Fruits, Sweet Pickles, India Relish, Mandalay Sauce, Pure Imported Olive Oil, etc. Let us send you our interesting booklet entitled "The Spice of Life;" also our booklet on vinegars.

H. J. HEINZ COMPANY,

New York Pittsburgh Chicago London

Why not Let HEINZ Supply Your Home Preserves?

Instead of doing your own preserving, why not get your family supply from the many choice varieties prepared by Heinz?

It's a long step toward easier housekeeping—and often to better food, for in the Heinz Kitchens preserving is done with equipment and experience that no single home could possess.

Choice, specially-selected fruits and pure granulated sugar—nothing is ever used but these in Heinz Preserves. There can be no question as to purity or cleanliness, for our work is clean by system, with superior facilities and tidy helpers to carry it out.

Even so small a thing as the seeding of a cherry, or the hulling of a berry, receives the *individual* attention of an experienced worker whose sole thought is, how clean—how well.

This exactness of the Heinz Way manifests itself most forcibly in the goodness and excellence of our foods.

There's greater variety in Heinz Preserves than mostly found in the home stock—Pineapple, Strawberry, Cherry, Peach, Raspberry, Damson, etc. In sterilized crocks, jars or our specially-made sanitary tins of convenient sizes.

H.E.I.N.Z

57 VARIETIES

The whole story of Heinz Preserves—as well as of the famous 57 Varieties—is told in "The Spice of Life," a copy of which we will send you upon request.

H. J. HEINZ COMPANY,

New York Pittsburgh Chicago London

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Baby or Sister?

Children of every age long for

Cream of Wheat

Because it is so good to Eat

A dainty breakfast
A delightful luncheon
A delicious dessert

CREAM
OF
WHEAT
A Sure
Sign of
Good
Eating
Cream of Wheat
meets hunger's call, morning, noon and night

CREAM of WHEAT
Children everywhere "watch the clock" for time to eat
CREAM of WHEAT
because they love it so
A dainty breakfast
A delightful luncheon
A delicious dessert
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CREAM of WHEAT

Children everywhere "watch the clock" for time to eat

because they love it so.

A dainty breakfast
A delightful luncheon
A delicious dessert

CREAM
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Children every-
where "watch
the clock" for
time to eat
CREAM
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WHEAT
because they love it so.
A dainty breakfast
A delightful luncheon
A delicious dessert

settles the question delightfully. The taste says so, the appetite is perfectly satisfied, and the sound body proves it. Serve hot or cold — Breakfast, Dinner, Supper.

CREAM of WHEAT

Children every= where "watch the clock" for time to eat

WHEAT

because they love it so.

A dainty breakfast
A delightful luncheon
A delicious dessert

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Collier's

THE NATIONAL WEEKLY

JESSIE WILLCOX SMITH

HOUSEHOLD NUMBER FOR FEBRUARY

VOL XXXVI NO 18 JANUARY 27 1906 PRICE 10 CENTS

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The Car That Makes and Keeps the Youngsters Well, Strong and Happy

The "GEARED" Car.

IS *your* Boy perfectly well and strong?

Is he developing just to suit you, and are you *sure* that you are doing everything in your power to *help* him to perfect health?

Does he eat well, sleep well and *play* well, or is his appetite poor and his rest fitful and broken?

Does he "mope" about the house instead of being eager to get [illegible] young Comanche Indian?

"*What your boy needs, Madam, is an Irish* [illegible]"

[illegible] advice that,—worth all the medicines, [illegible] "Cure" "Treatment" [illegible]

[illegible] Irish Mail Car is the *only* form of exercise for children that both makes and keeps them in robust health.

It combines perfectly well balanced development with the keen, exhilarating [illegible] enjoyment that turns into play what [illegible]

The muscles of the entire body are brought into play, as you see by the illustration. Arms, hands, wrists, shoulders, [illegible] ment necessary to propel the car.

And without any unusual or dangerous strain upon any part, as is the case in the use of a tricycle, where the legs are over-exercised at the expense of the chest, arms and back.

You see your boy *can't* be injured by *any* accident from the [illegible]

Because it is constructed on scientific principles approved by eminent physicians and authorities on physical culture, which meet all requirements of rational exercise for Boys [illegible] of from 4 to [illegible]

For *this* car, Madam, was designed *both* as a health and pleasure giving device.

It is not to be classed for a moment with the cheaply constructed *toy* cars you will find offered [illegible] Please remember that!

* * *

The "*Irish Mail*" is the "geared" car.

It can, therefore be driven at greater speed than any other car.

[illegible] is absolutely *safe*, because built so close to the ground that it *can't* upset.

[illegible] steel and selected hickory. [illegible] parts to break [illegible] of repair it will last [illegible]

Rubber tired, smooth, quiet, easy running. A car that can be handled by [illegible]

[illegible] usual clatter and "racket" that is [illegible]

[illegible] and scarlet [illegible] ish Mail" is a favorite with [illegible] grown-ups as well as the youngsters.

[illegible] Boys [illegible] soon [illegible] them on the road to perfect health; their bright eyes, rosy cheeks and vigorous bodies will be your best [illegible]

[illegible] ful work of the "IRISH MAIL" Cars in promoting health and happiness of children.

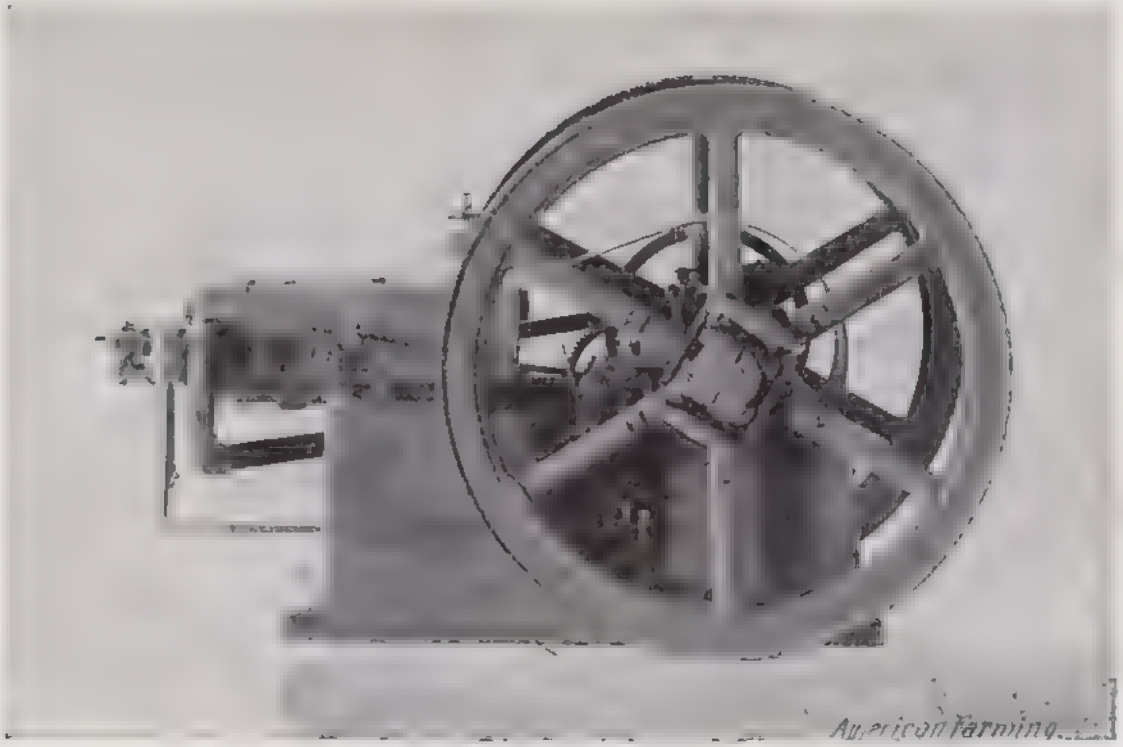
You [illegible] ought to have them in stock [illegible]. There is *no* car "just as good" on getting the genuine "**Irish Mail**." If your Dealer can't supply you [illegible]

Write for our free catalog, describing the entire "Irish Mail" line.

Hill-Standard Mfg. Co., 940 Irish Mail Ave., Anderson, Ind., U. S. A.

POWER

Above everything else the shop man must have reliability. At his touch the power must be in motion. It must not have the habit of getting out of order.



DEPENDABLE SERVICE

is just one of the distinguishing marks of I.H.C. Gasoline Engines. There's the unfailing response to every call, but there's also

The Simple Machine.
Correctness of Principle.
Economy of Running.
Nice Adaptability to Uses.
Faultless Workmanship.

These are features that will appeal to you if you need a power, for any purpose. It will pay any power user to know all about the I.H.C. Gas and Gasoline Engines before he buys.

They are made horizontal, Stationery and portable in 4, 6,8,10,12 and 15 h. p. and Vertical in 2,3,4 and 5 h.p.

Begin the investigation now. Write for free Catalogue.

The International Harvester Company of America (Incorporated)

No. 7T MONROE STREET, CHICAGO, ILL.

Large pine, cedar and spruce moved by Hicks Tree movers to screen service court. Residence of Mr. Walter G. Oakman, Roslyn, L. I.

EVERGREENS

Evergreens, 3 in. to 2 ft. high by the 100,000.

Evergreens, 2 ft. to 8 ft.

Evergreens, 8 ft. to 40 ft. Over 1,000 of them, ready for successful transplanting. Some have been growing in our Nursery 40 years.

Tree-moving machinery of our invention for various types of tree and soil. Crews of expert men with portable house to move trees from your vicinity.

SPECIAL OFFER

		Per 10	Per 100
Pitch Pine	8 in.	$ .15	$ 1.00
" " tr.	8 in.	.60	5.00
" " tr.	1 ft.	1.00	8.00
" " tr.	1½ ft.	1.50	12.00
Scotch Pine tr.	6 in.	.50	4.00
" " tr.	1 ft.	1.50	12.00
White Pine	2 in.	.30	2.00
" " tr.	3 in.	.60	5.00
" " tr	6 in.	1.00	8.00
" " tr.	1 ft.	1.75	15.00
" " tr.	1½ ft.	2.75	25.00
" " tr.	2 ft.	3.75	35.00
Austrian Pine	4 in.	.50	4.00
" " tr.	1 ft.	2.00	15.00

	Per 10	Per 100
Mugho Pine tr. 6 in.	$ 2.50	$ ——
Densiflora Pine, Japanese, tr. 6 in.	1.50	12.00
" " tr. 1 ft.	1.80	15.00
Norway Spruce tr. 8 in.	1.00	8.00
" " tr. 1 ft.	1.40	12.00
" " tr. 1½ ft.	2.25	20.00
White Spruce, 4 in.	.80	7.00
Engleman's Spruce, blue. From Colorado, and better than Colorado Blue Spruce, 2 in.	1.00	8.00
Engleman's Spruce tr. 4 in.	2.00	15.00
Concolor Fir, 3 in.	1.00	5.00

Packing Extra

Send for price list and catalogue giving the scientific reasons for the successful growth of evergreens

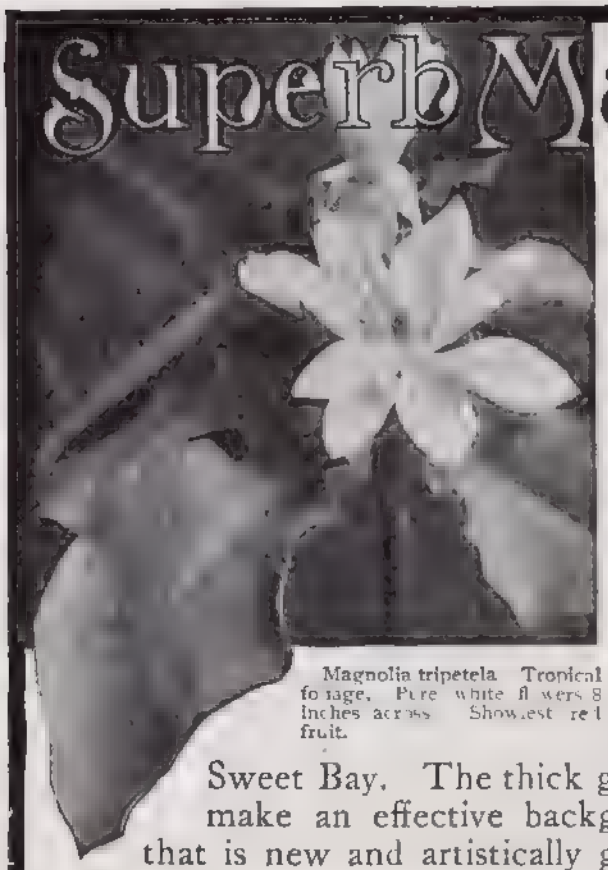
ISAAC HICKS & SON

Nurserymen and Scientific Tree-movers

Telephone 76W

WESTBURY STATION, LONG ISLAND, N. Y.

Superb Magnolias



Magnolia tripetela Tropical foliage. Pure white flowers 8 inches across Showiest red fruit.

The first time that *all* the hardy species known to science have been offered. The exquisitely beautiful flowers and luxuriant healthy foliage of the Magnolias make this rare opportunity, for buying them in quantity at low rates, one of the richest offerings of the season. Plant them by the dozen—by the hundred, on the lawn, along the border of woodland and swamp. Hedge the garden with M. glauca, the Sweet Bay. The thick glossy foliage and creamy cups make an effective background for the flower border that is new and artistically good. Special offer M.

		EACH	PER 10	PER 100
Magnolia tripetela,	1-2 ft.	.25	2.00	18.00
M. "	2-3 ft.	.40	3.50	
M. "	4-5 ft.	.60	5.50	50.00
M. "	5-6 ft.	1.00	9.00	80 00
M. glauca, Sweet Bay,	3 in.	.05	.40	3 00
M. "	1 ft.	.25	2.00	18.00
M. "	2 ft.	.40	3.50	30.00
M. macrophylla,	1½ ft.	1.25	11.00	100.00
M. stellata,	2 in.	.08	.70	6.50
M. "	1½ ft.	1.50	12 00	

M. Kobus, M. hypoleuca, 2 ft., at $1.00. M. Watsonii, M. parviflora, M. Yulan, 1 ft., at $1.00. M. soulangeana, M. salicifolia.

General Nursery Stock Old Fashioned Flowers

Shade and Evergreen Trees up to 30 ft. high

Shipped by the Carload

Evergreens and Oaks by the 100,000 from Long Island and Northern seed, at low rates in quantity

Send for catalogue, "Trees for Long Island," and price list.

Twelve Tree-Movers for various types of trees and soil, carrying trees up to 2 ft. diam., 60 ft. high by 45 ft. wide, with the *full natural root system* spreading 30-40 ft. The permanently successful method.

ISAAC HICKS & SON

Nurserymen and Scientific Tree-movers

Telephone 76W. **WESTBURY STATION, LONG ISLAND, N. Y.**

HICKS TREES

4 to 6 in. in diameter, 16 to 30 ft. high

BY THE CARLOAD

Save years of waiting for ordinary Nursery stock. One perfectly developed tree is worth several small trees and is the most economical investment. A class of stock that people want. It is within the means of the average purse.

The usual sizes of trees, shrubs, old-fashioned flowers, and formal garden material in quantity.

Evergreen, oak and chestnut seedlings by the 100,000 grown from Long Island seed to fit the conditions of Long Island and north-eastern United States. The foresight and skill of the Westbury Nurseries makes possible reforesting barren land, the planting of wind-breaks, shelter belts and screens.

Send for price list.

We have prepared for moving, on Hicks Patent Tree-movers, large shade trees up to 50 feet high and 30 feet spread of roots and top. Large evergreens up to 45 feet high.

12 Tree movers—expert men—sent anywhere.

ISAAC HICKS AND SON

Nurserymen and Scientific Tree Movers

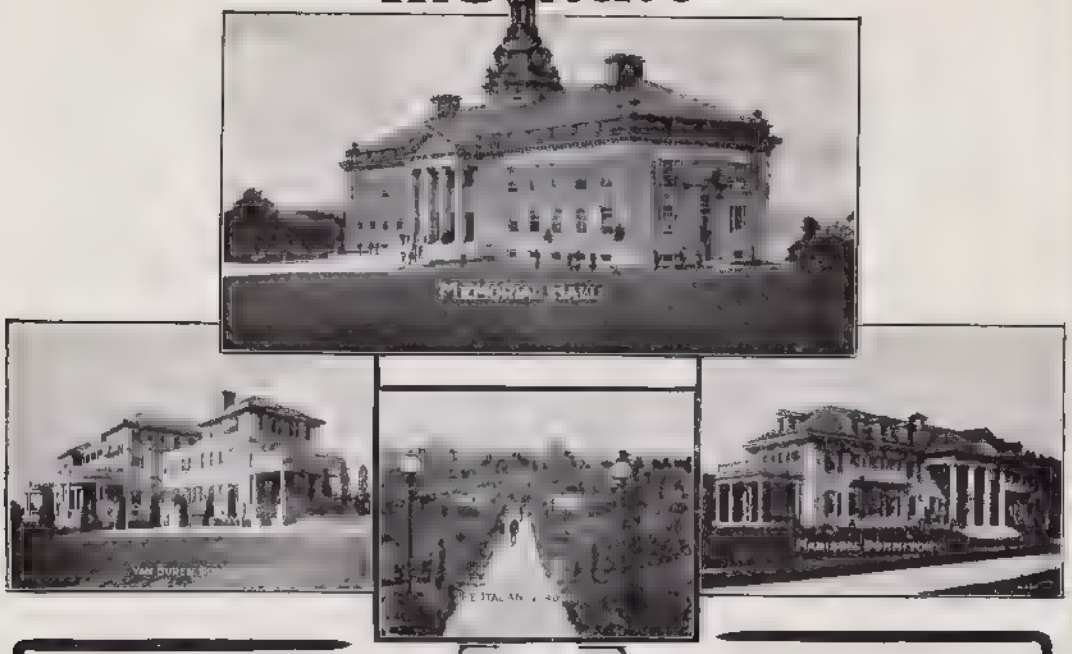
Telephone 76 W

WESTBURY STATION, LONG ISLAND

School Directory

In this directory will be found the announcements o
We will gladly supply information regarding them an
schools. Address *Readers' Service*, COUNTRY LIFE IN AMERICA.

Jacob Tome Institute



Boarding
School for Boys
Port Deposit, Maryland.

AN ESTATE of 160 acres on a bluff 200 feet above the Susquehanna river. Midway between New York and Washington, Philadelphia and Baltimore. Five splendid dormitories, heated by steam, lighted by electricity, carpeted throughout. Private rooms completely furnished. Shower baths and fixtures in marble on each floor.

Nearly a million dollars in grounds and buildings, ornamental gardens and terraces. Two miles of Telford road winding through the campus. Pure water, private reservoir with a capacity of ten million gallons.

Endowment over two million dollars.

Faculty and Curriculum. Faculty of 28. Seven heads of departments. Group and credit system of instruction. Individual attention. Pupils advanced according to individual ability and application. Prepares for any college, engineering or scientific school in the country or for business life. Unusual facilities for Manual Training. Special Courses. Two Year College Course for men fitting for the professional schools.

Physical Training and Athletics. Special attention given to the physical welfare of pupils; expert director of physical training. Football and baseball fields; quarter-mile cinder track. Gymnasium, swimming pool. Golf links, tennis courts. Fleet of row boats.

Climate superb, location unsurpassed, plant unequaled.

A GREAT SCHOOL FOR BOYS

Expenses. $630, including books, stationery, laundry. A rebate of $100 to Maryland boys.

For illustrated catalogue address

FRANCIS RANSOM LANE
DIRECTOR

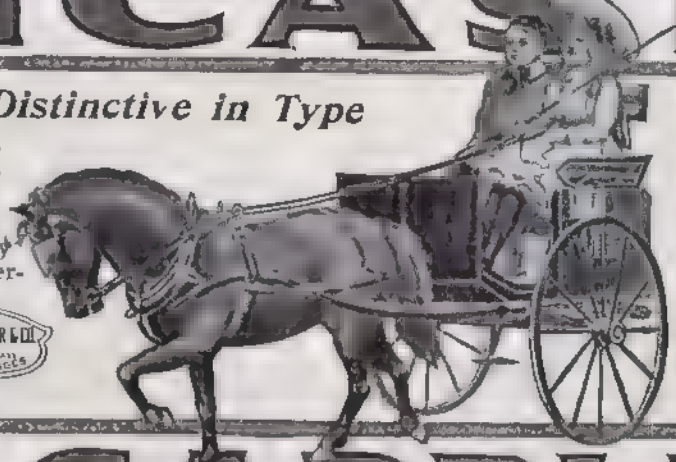
CINCINNATI CHICAGO NEW YORK

Owners of the Everett Piano Company, Boston

LANCASTER

PONY VEHICLES — *Distinctive in Type*

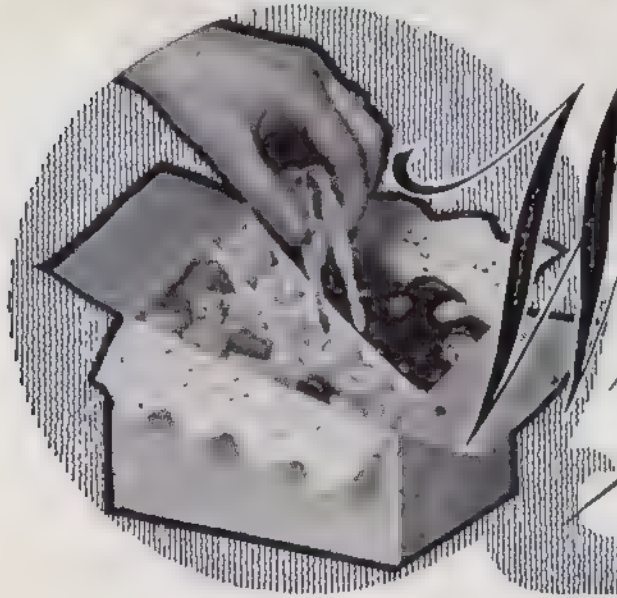
The treatment of the designs is ideally artistic. The character of the material and of the workmanship is the best the world affords, while the appointments give that extreme luxury so much appreciated by growing persons. Ask dealer for "Lancaster" Pony Carts and Traps. Look for this mark of most advanced carriage construction.



If dealer doesn't carry our carriages, send us his name and we'll send you free Catalogue showing correct styles and see that your order is filled to your entire satisfaction.

J. A. LANCASTER & CO.
21 Main Street
Merrimac, Mass.

PONY CARRIAGES



WHEN IT'S

Whitman's

Chocolates and Confections

it's difficult to choose from the delicious variety that fills the box.

For sale where the best is sold.

Whitman's **Instantaneous Chocolate** made instantly with boiling milk.

STEPHEN F. WHITMAN & SON, 1316 Chestnut St., Philadelphia.
ESTABLISHED 1842.

J. C. VICKERY

179, 181, 183 REGENT STREET
LONDON, W., ENGLAND

No. L 2235

Manufacturer of
Gold and Silver Ware, Jewellery, Finest Leather Goods, Etc.

To

H. M. King Edward VII.
H. M. Queen Alexandra
H. M. The King of Portugal
T. R. H. The Prince and Princess of Wales

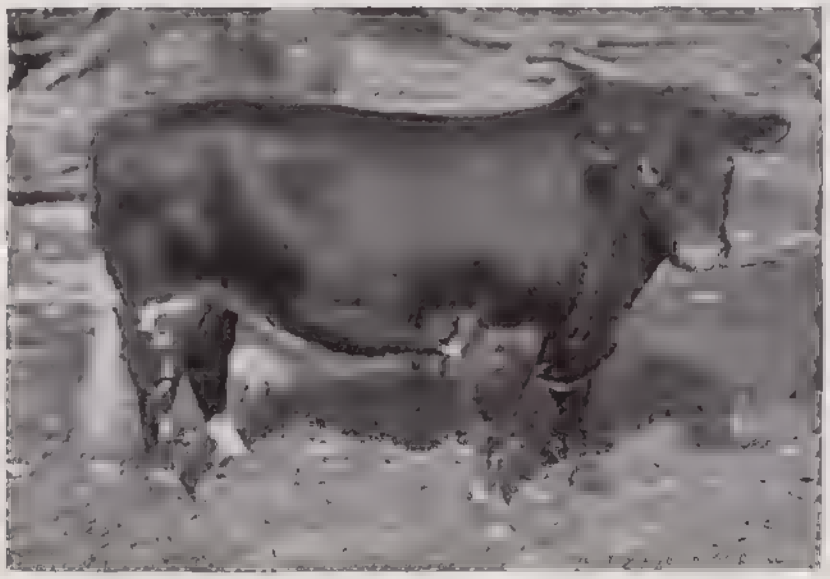
VICKERY'S Popular Garden, Verandah, or Boudoir Writing Table.

Very portable, stands securely, opened or closed.

Completely Fitted Writing Pad with Flap and Folding Legs

As illustration, forming a compact Writing Table when opened.

Moss Green or Royal Red Pads, with Mahogany Folding Legs, only . .	$19
Ditto, without *Flap*	15
Green Crushed Morocco with Flap	36
Polished Golden Crocodile Skin with Flap	56



Public Sale
of
Forty High Class Polled Durhams

Comprising choice cattle from the herds of Fletcher S. Hines, Malott Park, Indiana; Oscar Hadley, Plainfield, Indiana; W. B. Marvin, Urbana, Ohio, and J. H. Martz, Greenville, Ohio.

To be Sold at

Urbana, Ohio, Tuesday, June 26, 1906

This is your opportunity to found a herd of this Popular Breed of Hornless Cattle. Good for Milk and Beef. The sale includes Young Bulls, Heifers, and Cows with calves at foot.

Write for Illustrated Catalogue to **J. H. Martz, Greenville, Ohio**

RUSTIC WORK

PRACTICAL plans for picturesque Automobile and Animal Houses, Arbors, Bridges, Boat Houses, Cabins, Camps, Dens, Furniture for house and garden, Fences, Gates, Lodges, Pergolas, Play houses, Umbrellas and all other kinds of rustic structures for gardens and estates.

Original designs adapted to site made without delay. State what you want to build, and describe the site selected. Estimates furnished for rustic construction to be erected by most competent workmen in my employ.

To facilitate business with those living at a distance from New York, I will send by registered mail or express to any part of the United States or Canada and upon receipt of $5.00, complete working drawings, as follows:

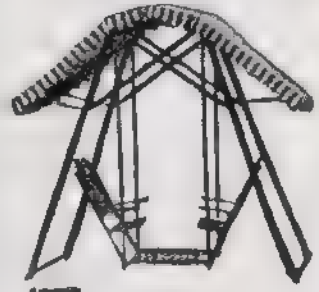
Sheet No. 1. Two fence designs with covered gateway
" 2. Summer house, 12 feet in diameter
" 3. Bridge design, adaptable to different lengths
" 4. Chairs and settees in several designs
" 5. Two grape arbor designs, also adaptable
" 6. Small log cabin, suitable for play-house, studio, or work-shop

Any one sheet of plans for $1.00. Address

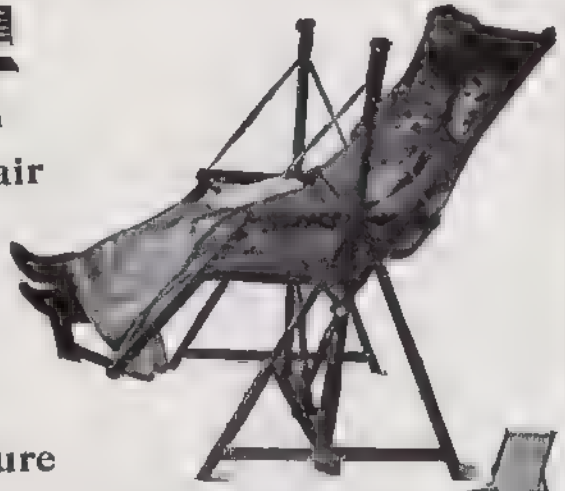
J. H. TROY, Rustic Builder

Mount Hissarlik Nurseries,
New Rochelle, N. Y.

New York City Office, 24 East 34th Street



This Light, Graceful Swing Chair



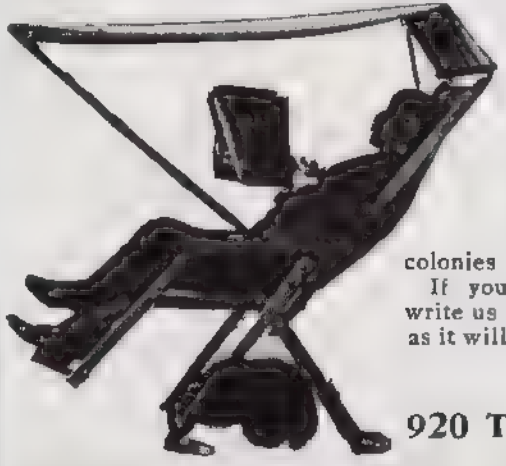
the original design, automatically adjusts itself to any position desired. No slipping or sliding in this chair because it has the *independent* under seat, and the soft, yielding but substantial fabric supports and rests you *always*. No hard spots, no ratchets or levers to operate. Can be quickly and entirely folded into a very small package if desired. It is stronger, lighter and more comfortable than the weak, unwieldy imitation iron chairs which *pinch* your fingers, *cut* and *rust stain* your clothing and exhaust your patience in a hundred other ways.

Superior Quality Lawn Furniture

means solid comfort for you, your family and friends all the summer long and for many seasons to come.

If you consider graceful designs, practical, comfortable patterns, durable material and construction and attractive, lasting finish, you certainly will buy none but the SUPERIOR QUALITY kind. Best material, skilled workmanship, long experience and a determination to excel, make SUPERIOR QUALITY furniture better than any other and it is sold at prices everybody can afford. It not only looks better but *is* better than any other and more economical to you on account of its *genuine intrinsic* value. Ask your dealer to show you some of our 50 designs in summer furniture. Accept no substitute. Every genuine piece has this mark. It is your guarantee.

KALAMAZOO SUPERIOR QUALITY



Our Reclining Chair With Automatic Canopy

is just the proper article for the lawn, beach, launch and steamer; a delightful accessory to out-door life, or to read, lounge or sleep in. Easiest chair to operate. Any position from upright to horizontal obtained without effort or jar. Canopy entirely automatic, easily detached if desired. Entire chair folds into small flat bundle for storage or travel and is particularly desirable for invalids at all times. Adopted by all out-door colonies in fresh air treatments.

If your dealer cannot furnish our SUPERIOR QUALITY furniture write us for prices and catalog No. 21 in colors. Cut out this advertisemen as it will not appear again.

KALAMAZOO SLED CO.

920 Third Street **Kalamazoo, Mich.**

To Florida Again This Winter

INDIAN RIVER, FLORIDA

1845 Kentucky Military Institute 1906

Last Winter for the First Time in the History of the World a Boys' Boarding School, Faculty and Cadets, was Transferred from its Permanent Home in the North Temperate Zone to a Temporary Winter Home in Florida.

So great was the success of the experiment, which will be repeated this winter, that the actual facts exceed all expectations. But one drill was missed in three months on account of the weather, and all kinds of outdoor exercise, boating, bathing, hunting, fishing and athletic sports were engaged in the whole time. Yet the academic work was of even a higher standard than at home, to say nothing of the educational value of the trip.

There will be few vacancies and early application will be necessary, a number being declined last year for lack of room. **Price $400 per year. Send for catalogue with Florida supplement.**

COL. C. W. FOWLER, Supt., Box 25, Lyndon, Kentucky

Country location nine miles from Louisville.

NATIONAL PARK SEMINARY FOR YOUNG WOMEN

Washington, D. C. (Suburbs).

One of our twelve buildings.

OUR CREED:

Education—Collegiate, but adapted to individual needs, health, tastes and talents.

Joy (not examinations)—The incentive of work.

Health—The matter of first consideration

Cultured Personality—An essential to success.

Happiness—Secured by beautiful surroundings, a necessary condition of endeavor.

Home Making—The object of training. **Social Grace**—A legitimate end of culture.

Advantages of both large and small school by division into eight separate groups.

Valuable Recreation in the study of Congress, Government Departments, Foreign Legations and Social Functions. Send for catalogue Adddress Box 150, **Forest Glen, Maryland.**

Water for Your Country Home

You may have all the conveniences of a *city water supply* in your country or suburban home.

You may have an abundant supply of water, delivered under *strong pressure* to the bathroom, kitchen, laundry, barn, garden, lawn, or wherever you want it

This is all accomplished by the *Kewanee System*

With the Kewanee System you may have even *more* than a city service, because it will provide *soft water* for the bath, toilet and laundry, and you will have absolute *fire protection.*

With the Kewanee System all these conveniences are yours, without a penny for water tax.

* * *

The Kewanee System is easily explained; it consists simply of having a *Kewanee Pneumatic Tank* located in your *cellar* or *buried in the ground*

The water from *your own well or cistern* or other source, is pumped into the Kewanee Tank.

When the tank is half full of water, the air which originally filled the entire space will be compressed into the upper half of it.

When the tank is two thirds full of water, all the the air will be compressed into the upper one-third.

At this point there will be a pressure of sixty pounds, under ordinary conditions

An average pressure of 40 pounds may be maintained under ordinary conditions; this will elevate the water in the service pipes about 90 feet

You see that the *method*, while perfectly simple, is based on a thoroughly *scientific* plan

The Kewanee Water Supply Company was first to *apply* this principal successfully in supplying water, and after ten years of experience the System has proved *entirely satisfactory*

Over 5,000 Kewanee Outfits now in use.

* * *

The old style elevated or gravity tanks are passing

While you run across these gravity systems occasionally in suburban districts, still it is true that a large and growing percentage of the newer and better Country Houses are being equipped with the *Kewanee System.*

There's a reason!

* * *

The old fashioned gravity system meant pumping water *up* in order to get it *down* again

Now, to give the necessary pressure for fire protection and service, the elevated tank must be located on top of a tall tower.

This is expensive, unsightly and unsafe.

The water freezes in winter, becomes warm and stagnant in summer, and repairs are a big item of expense.

The attic tank doesn't give sufficient pressure for fire protection.

Its weight is apt to crack the plastering, and when it leaks (as it is pretty *sure* to do) your house is flooded. Just one such expensive accident may cost you many times the price of a Kewanee Outfit.

—Which cannot flood the house, because the tank is resting on solid ground where it can do no damage.

The installation of a Kewanee Pneumatic Water System in your country home means

plenty of pure, fresh water,
—cool water in the summer
—no freezing water in winter,
—absolute protection from fire,
—decrease in insurance rates,
—a plant that will last a lifetime,
—no expensive repairs

It solves the country water problem completely

The Kewanee System will take care of *all* your needs—for home, garden, lawn, stables, poultry houses, etc

* * *

Our Kewanee Outfits are *complete*

Not a pump only, which in itself cannot give you a water supply—nor a tank only, which is useless unless you have some form of pumping power—

But we furnish the *whole thing*—a *complete* system of water supply.

Our *Engineering Department* is prepared to solve your water problem no matter how difficult that *problem* may now appear.

Kewanee Outfits are made in sizes suited to the smallest cottage or largest building or group of buildings.

We guarantee every Kewanee Outfit to give perfect service.

Send for catalog No. 1, which gives names of users in your vicinity—free if you mention COUNTRY LIFE IN AMERICA.

Kewanee Water Supply Company
Drawer A **Kewanee, Illinois**

Furnished to the B. P. Young Co., Pittsburgh, Pa.—Alden & Harlow, Architects

THE LAUTZ COMPANY

High-Class Workers in Marble and Onyx

MANTELS, STAIR, HALLS, WAINSCOTING AND ALL INTERIOR MARBLE WORK

Estimates and Suggestions Given to Prospective Users

THE LAUTZ COMPANY

861 MAIN STREET BUFFALO, N. Y.

As a smoker, you probably know what sort of cigar 10c. will buy over the retail counter.

You have some idea of the jobbers' profit and retailers' profit.

If you throw as little as a nickel on the counter, you know about what you get for that.

Now, the fact that you do not get a genuinely good cigar over the counter for the money you wish to pay, isn't saying that you can't appreciate a good smoke when you do get it.

It's all wrong—dead wrong—the argument of the manufacturing and jobbing trade, that the 5 and 10 cent smoker only wants something to burn—not taste—not aroma—just smoke

Now just follow us a moment. Our experience may interest you. Our entire business is making good cigars and selling them direct to the smoker.

We have thousands of customers among the best business and professional men in this country—bankers, railroad officials, clubs, officers of the Army and Navy. We sell cigars as high as 15 cents—perfectos that cost 25 cents in any cigar store.

We also make much less expensive goods

A man may come to us for two reasons—to reduce his cigar bills, or pay the same money and get a better—a very much higher grade of Havana leaf and workmanship.

If he will tell us what he has been smoking, let us advise him and submit free samples for his trial and approval, we will guarantee that he can do both—reduce his cigar bills and smoke better cigars.

As a case in point, take just our *Examiner* cigar, shown actual size in above photograph reproduction.

The filler is long, clean, clear Havana. It is wrapped with genuine imported Sumatra leaf. It is superior to any cigar we know of, sold by dealers at 10c. straight.

We can make a living factory profit on it at $5.00 per hundred, and have it rolled by high-class workmen in our own place—the cleanest and most sanitary cigar factory in America.

We select and import our own leaf, direct. We cut out all intermediate profits and deliver it to you express paid, at $5.00 for a box of one hundred, or $2.50 for a box of fifty—that's five cents apiece, and if you can match this cigar—three for a quarter—in your own town, we will return your money in full, pay the expressage back on all cigars left in the box, and make no charge for those you have smoked.

Or, better than that—send no advance payment, simply write us on your business letterhead, enclosing your business card, and we will send you a box of fifty Examiner cigars on *trial;* smoke a few samples. If you like them, and find we are justified in our claims for them, send us $2.50, but if for any reason you do not care for them, return them immediately at our expense and no charge will be made for those you smoked in making the test. We pay expressage both ways. We could not do this if we were not sure of our ground. We know tobacco; we know current cigar values.

The only chance we take is whether or not you know cigar quality when you get it, and we have the faith to believe that you do, in spite of the theories of the cigar jobbers

Of course we also take the risk of striking your particular taste.

You take no risk at all.

We can show you a thousand testimonials from prominent men who order all their cigars from us by mail, and who have been reordering constantly for the last five years

We have a high standing here at home. Hundreds of our best customers live right here in New York City, and heaven knows there are plenty of cigar stores here.

Write now while you have our address handy.

LA RECLAMA CUBAN FACTORY

1911 First Avenue, New York City

References: Union Exchange Bank—Dun—Bradstreets

WALLACE

Celtic Cross made of Granite at our shops in Barre, Vt., and erected at Ogdensburg, New York.

A CLASSIC TOUCH IN GARDEN FURNITURE

As men and women grow in culture fewer things are sought, but those few things must be better. We are getting away from the shoddy which proves we are surely growing.

Let us submit sketches for your Garden Accessories. We make them in MARBLE, STONE and BRONZE.

SUN DIALS, BENCHES, VASES,
FOUNTAINS, PERGOLAS, and all
articles of GARDEN DECORATION

Notice this Terminal Bust of the gentle Addison.

Modeled at our studio in Long Island City, executed in Carrara Marble, and placed in the grounds about a Newport villa.

Do you contemplate a memorial of any character that can well be made in Stone or Bronze, let us make a suggestion by sketch. No charge. Simply tell us your purpose.

Interior Church Decoration, Altars,
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Leland & Hall Company

Granite Works: Barre, Vt.

Workers in Stone and Bronze
557 Fifth Ave., New York

Studios: Pietrasanta, Italy. Long Island City.

LELAND & HALL CO.

WORKERS IN STONE

557 FIFTH AVENUE
NEW YORK

STVDIOS { PIETRASANTA, ITALY
LONG ISLAND CITY

WORKS: BARRE, VT.

Invite special attention to their unequalled facilities for designing and executing the highest grade of garden adornments, mantels, tables, statuary, altars, fonts, monuments and mausoleums, in marble, granite and stone.

Also invite inspection of the pieces in stock.
Designs and prices sent upon request.

THE CROWNING TOUCH TO A BEAUTIFUL GARDEN

NOTHING adds so much to the appearance and delights of a garden as a beautiful piece of marble garden furniture. The sun dial or bench becomes the central feature of the landscape. It attracts more attention and gives more pleasure than any other thing of equal cost about the country estate or the suburban home.

Because they are conspicuous they should be good. Our marble garden pieces are cut in Italy by the most competent workmen. The material is the finest quality of Carrara marble, selected at the quarries by our own buyer, who has made Italian marble a life study. You can pay higher prices, but no finer marble can be bought. Let us quote prices on the pieces illustrated herewith.

ANTIQUES

It is a well-known fact that there are practically no marble antiques in the market. Such pieces are not to be had at any price, except in rare instances. We can, however, produce the effects of age when desired. This subject has been given special study.

MAUSOLEUMS, SUN DIALS, BENCHES, FOUNTAINS, VASES, STATUARY, MONUMENTS, PERGOLAS, TABLES, WELLS, ETC., IN MARBLE, STONE AND BRONZE

LELAND & HALL CO., Workers in Stone

557 FIFTH AVENUE, NEW YORK.

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LONG ISLAND CITY

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Write for Portfolio of Designs

SUN DIAL—An exact reproduction of the famous Garden Sentinel at Medford Hall, Suffolk, England. Cut in Italy of the finest Carrara marble. The price is reasonable.

(N. B.)—The English designs of garden accessories are usually more appropriate than Italian pieces in American gardens.

MARBLE GARDEN BENCH—Original lion's paw design, approved by the most competent authorities in America. Made in Italy of Carrara marble. This piece is much less expensive than its beauty and quality suggest.

LELAND & HALL CO.

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WORKS: BARRE, VT

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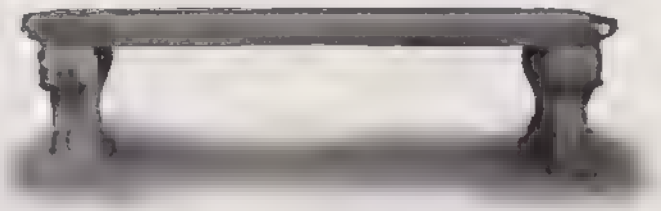


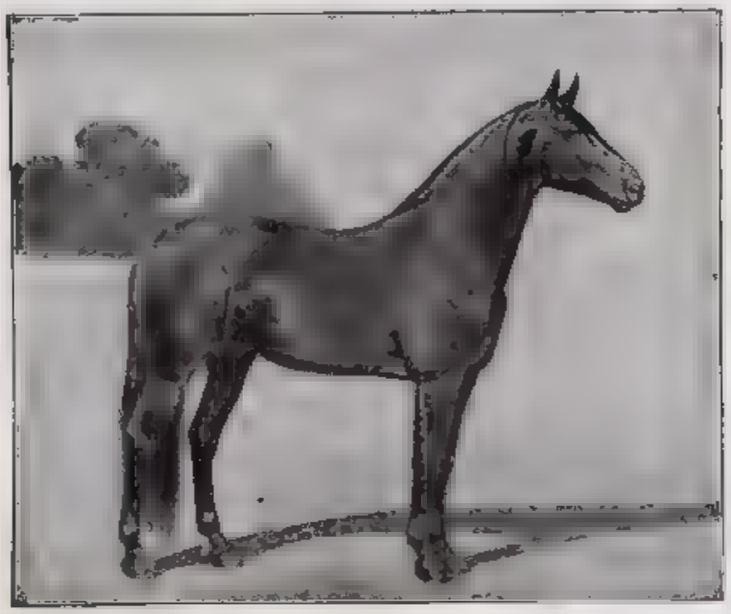
Also invite inspection of the pieces in stock

Designs and prices sent upon request

SUPREMACY

(Blood Brother to Major Delmar)

This grand horse—one of the best bred trotting stallions of the world—is now the property of Lewisiana Farm. None of his famous ancestors, Mambrino, Abdallah, George Wilkes, Hambletonian, Alcantara or Electioneer, were handsomer animals or surer foal getters than he. He is a bright mahogany bay, 15.3 hands, weighs 1,200. His sire, Bell Boy, sold for $52,000 as a 2-year-old. Lewisiana Farm is breeding all of its mares to him. His colts are all beauties. Applications will be booked for a limited number of choicely bred mares. SERVICE FEE, $100.



Was there ever such a magnificent array of famous producing stallions and mares in one pedigree?

Supremacy 13323
Record 2.20. Trial 2.17 blood brother to Maj. Delmar . . 1.59¾ (champion gelding) 2.07 High wheel sulky World's record 2.01¾ without wind shield
Grandsons Electioneer 125 have sired:
Tommy Britton 2.06½
Boralma 2.07
Charley Herr 2.07
Annie Lee, p. 2.07½
Carmine, p. . . . 2.07¾
Bellfitzsimmons p 2.07¾
Pat Michael, p. 2.07⅞
Alpha W., p. . . 2.08
Silver Chimes, p. 2.08¼
Jasper Ayers . . 2.09
Col. Loomis, p. . 2.09¼
Rowellan 2.09¾
Promise 2.10
etc., etc.

Electioneer 25
sire of
Arion, 4 2.07¾
Sunol 2.08¼
Palo Alto . . . 2.08¾
163 others. Dams of
Katalwa 1.3 2.05½
Dolly Dillon 2.07
Crazy, p. . . . 2.09¾
94 others in 2.30

Bell Boy 5350
(Record 2.19¾
sire of
Princess Bonnie 2.17¼
and 15 others in 2.30
grandsire of
Tommy Britton 2.06½
Bellbrutler 13
Chimes 2.10¾, sire of
The Abbott . . 2.03¾
62 others in 2.30
Bow Bells 2.14 sire of
Billy Andrews 1 2.06½
24 others in 2.30
Belsire 2.18 sire of
Furl, p. 2 . . . 2.15½
St Bel 2.24¾ sire of
Lynne Belle . . . 2.10½
&c.

Susan
dam of
Supremacy (sr) 2.20
full sister to
Allen Lowe, p 2.12
Alcameda, p . . . 2.19¾
Alcamedia 2.30
half sister to
Auctioneer the sire of 3 in 2.30 or better.
Almaton the sire of 2 in 2.30 or better.
De Barry 2.19
&c.

Hambletonian 10
sire of
Dexter . . 2.17¼
Nettie . . 2.18
38 others in 2.30

Green Mt. Maid
dam of
Elaine 2.20
Prospero 2.20
7 others in 2.30

The Moore 870
sire of
Sultan 2.24
Del Sur . . . 2.24
40 others in 2.30

Minnehaha
dam of
Baron Rose 2.30¼
Beautiful Bells 2.29½
6 others in 2.30

Geo. Wilkes 519
(3.22) sire of
Harry Wilkes 2.13½
Engineer Wilkes 2.14¾
82 others in 2.30

Alma Mater
dam of
Allendorf . . . 2.19½
Alcyone . . . 2.27
and 7 others in 2.30

Happy Medium 400
sire of dams of
Sister Alice . . . 2.10½
Stamboul . . . 2.11¼
100 others in 2.30

County House Mare
dam of
Nettie 2.18
and grandam of
6 standard performers

Alcantara 729
Record 2.23 sire of
Sir Alcantara, p. 2.04¾
Moth Miller, p. 2.07
144 others. Dams of
Hetman Law p. 2.05¾
Charley Hoyt, p. 2.06½
55 others in 2.30

Susie
dam of
Allen Lowe, p. . 2.12
De Barry 2.19¾
Alcameda, p. . . 2.19¾
also 3 producing sons

Abdallah 1 by Mambrino
sire of dam of Gelosa (3), Maid 2.14
Charles Kent Mare
grandam of Bashaw 50 sire of 17 in 2.30

Harry Clay 45. Record 2.29
Sire of dam of Harrietta 2.10¼, etc.
Shanghai Mary
grandam of 9 standard performers

Clay Pilot 93 by C. M. Clay, 20
Sire of 3 in 2.30 or better
Belle of Wabash
dam of The Moore, sire as noted

Steven's Ball Chief
sire of the great mare Maud S.
Nettie Clay by C. M. Clay 22
grandam of 8 in 2.30 or better

Hambletonian 10
sire of grandam of Kremlin in 2.07¾
Dolly Spanker
dam of George Wilkes 2.22, etc.

Mambrino Patchen 58
sire of dam of Lou Wilkes 2.06¾, etc.
Estabella by Imp. Australian
dam of Alma Mater, dam of 8 in 2.30

Hambletonian 10
sire of Dexter 2.17¼, 39 others, etc.
Princess. Record 2.30
dam of sire Nancy Hanks 2.04, etc.

American Star 14
sire of dam of Guy 2.09¾ and 42 others
Grandam Nettie 2.18
grandam of 3 producing dams

Our aim is to keep only the best Horses, Cattle, Hogs, or Farm Live Stock.
Choice Jersey and Polled Angus Cattle. Best Berkshire, Poland China and Jersey Red Hogs.

Lewisiana Farm, Fredericksburg, Va.

Every Ounce Saved!

LISK'S

Sanitary SELF BASTING ROASTER

Ordinary roasting pans **waste** one pound in every five, the LISK ROASTER **saves** that pound, or one fifth of every roast. That means that the LISK ROASTER **pays for itself over and over again every year.** It saves the labor of the Cook as well as the loss of the meat; it is **self** basting. The Lisk Roaster is so constructed that the juices of the meat, vaporized by the heat of the oven, are constantly collecting on the inner roof of the roaster and drip back again in a steady shower of gravy on the roast below. That's automatic basting. A child who can tell the time can cook as well as the finest chef with a Lisk Sanitary Self Basting Roaster, for there is nothing to watch but the clock.

Think of it! A roast that won't shrink or waste, and can't burn or dry up; cooked to a turn and self basted in its natural juices.

The Lisk Roaster gives you all the meat, substance, and savor, and it makes money while it saves meat. The Lisk Sanitary Self Basting Roaster is made in Lisk's Imperial Gray Enameled Steel Ware, absolutely **sanitary** because it is seamless.

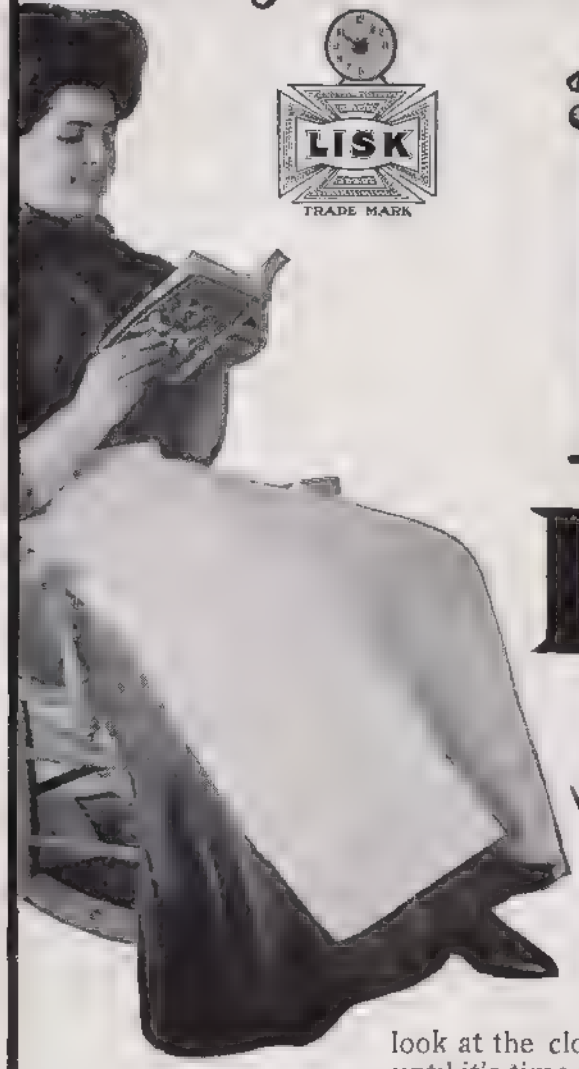
Made in four sizes and sold by all leading hardware dealers and house furnishing stores. Every Lisk Roaster unconditionally guaranteed.

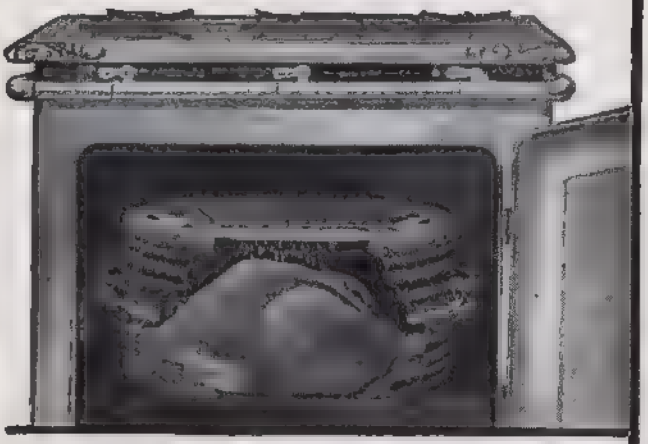
Illustrated Booklet F Sent Free on Request

LISK
TRADE MARK

THE LISK MANUFACTURING CO., Limited, Canandaigua, N.Y.

Nothing to watch—but the clock





LISK'S
Sanitary
SELF BASTING ROASTER

A roast means a rest to the owner of a LISK SANITARY SELF-BASTING ROASTER. Put the roast in the oven, look at the clock, and rest. There's nothing else to do until it's time to serve the roast.

Because of its **self-basting** feature the LISK ROASTER takes away all the drudgery of cooking. The juices of the meat, vaporized by the heat, collect in drops on the inner roof of the ROASTER and fall back upon the meat in a continuous shower of gravy.

Incidentally the LISK ROASTER saves one-fifth of every roast—one pound in five, and so pays for itself over and over again.

The LISK SANITARY SELF-BASTING ROASTER is made in Lisk's Imperial Gray Enameled Steelware. Can be used on the stove or in the oven. Cleans like china. No seams, joints or corners to hold grease, therefore **absolutely sanitary.**

Made in four sizes, unconditionally guaranteed, and sold by all leading hardware dealers and housefurnishing stores,

Illustrated booklet, F, sent free on request.

THE LISK MANUFACTURING CO., Ltd.
CANANDAIGUA, N. Y.

Back to Town

The migration to town after a healthful and enjoyable outing at seashore or mountains is not without pleasurable anticipations. The delights of city life to those who know how to live will be again taken up. Among these, Londonderry Lithia Water will play an important part. Its absolute purity, together with its great absorbent properties, make it a valuable adjunct to good living. No other water assimilates so well with a meal, perfect digestion attending its use. Nothing can equal "Londonderry" as a diluent for wines and liquors, enhancing the enjoyment of, and preventing harm from their use.

Its pleasure-giving, healthful properties are well known to those who make a study of how to get the most and best out of every-day life, whether at home or abroad.

Londonderry Lithia Water is served at all first-class hotels and clubs, and is sold by druggists, grocers and wine merchants. The Sparkling comes in quarts, pints and splits; the Still in half-gallon bottles

Our booklet entitled, "CHEERS," being a collection of carefully prepared receipts for cheering concoctions, both temperance and otherwise, will be mailed free to any address on request.

LONDONDERRY LITHIA SPRING WATER CO.

45 Elm St., Nashua, N. H.

Where there is a location to please everyone.

Long Island

Has more attractions than any other place near New York — provides Health, Comfort and Sport.

It has beautiful wooded hill country overlooking the Sound and Bays on the North Shore.

It has rolling farms with charming lakes and streams in the interior.

It has the Atlantic Ocean with perfect beaches for bathing, and the Great South Bay on the South Shore.

It has unequaled boating and fishing in its numerous bays all around the Island.

It has 'most a thousand miles of perfect macadam roads for Riding, Driving, and Automobiling.

It has nearly one-third of the Golf Courses in the State — including several of national reputation the finest in the country.

It is the ideal country for Permanent or Summer Homes, having the very best transportation facilities — the Long Island Railroad is reached more easily from all parts of New York City than any other line. In addition to its steam trains, it operates nearly 200 electric trains out of Brooklyn.

"Long Island Summer Resorts," a booklet containing a list of hotels and boarding houses on Long Island, also a list of real estate agents on the Island, free upon application at L. I. R. R. ticket offices, 120 Broadway, 95 Fifth Ave., 613 Sixth Ave., 574 Columbus Ave., 51 West 125th St., N.Y.; 333 Fulton St., 98 Broadway Brooklyn, or mailed upon receipt of 4 cents postage by the General Passenger Agent.

Long Island Railroad

263 Fifth Avenue, New York City.

A. L. LANGDON,
Traffic Manager.

HOWARD M. SMITH,
Gen. Passenger Agent.

Real Estate Directory

In this department are printed illustrated advertisements of country homes. A special low rate is quoted for advertisements under this head—cuts made free. Pages close about the sixth of the month preceding publication. Address REAL ESTATE DEPARTMENT, COUNTRY LIFE IN AMERICA, 133-137 East 16th Street, New York.

Extensive Country Place

COMPLETELY EQUIPPED AND MAINTAINED

Half Mile Frontage

on

Long Island Sound

VIEW FROM WATER FRONT

FOR SALE OR RENT 76 acre estate with half mile frontage on Connecticut shore of Long Island Sound, including spacious mansion, $25,000 barn, $20,000 stable. House for farm hands, 165 foot grapery. Orchard, 2 acre garden, gas house, ice house, etc. 80 foot elevation above water. Superb views. Price, $150,000. Rental price on application. Property is 60 miles from New York and is easily visited by automobile via good roads. It should be seen by those seeking a large, beautiful and well maintained country place.

Photos and maps sent on application to ARTHUR G. THOMPSON, 307 West Broadway, New York.

THE CONSERVATORY QUESTION

Pretty much every one who has any affection for flowers (and who hasn't?) wants a place for their protection and enjoyment through the winter months. You don't want to crowd the windows full for that forbids opening for the general "airings out," so the conservatory is the only solution—and what a delightful solution. The adding of these rooms of glass directly to the dwelling, you perhaps might think would cut out several desirable windows, but this can be easily overcome by placing the conservatory at a little distance and connecting it by a passage of glass. In the cut shown, the passage opens directly from the main hall, through the plate glass doors of which is a beautifully inviting glimpse of hanging orchids and the fern and foliage lined sides—a veritable all the year 'round bower. If you want one of these bowers, leading to a perpetual garden land of flowers, now is the time to get it well under way. Snow comes before you know it.

LORD & BURNHAM COMPANY

Greenhouse Designers and Manufacturers

1133 Broadway . . . Corner 26th Street . . . New York

Boston Branch, 819 Tremont Building

A Three Compartment House

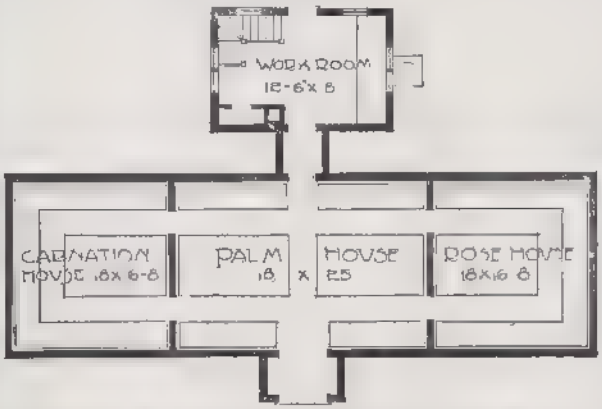
And Some Things It Grew

THIS Three Compartment House is particularly charming with its ornamental side vestibule and three-step approach. It fits perfectly and pleasingly with the general lay of the grounds, even adding a note of distinction all its own.

We took this photo the middle of October when the Carnation House was filled with plants and bloom promise. In another two weeks the spicy blossoms would begin to come, and from then on, one continuous round of color till almost the edge of summer.

In the center compartment were palms from many climes, several splendidly vigorous "Umbrella" being put in good health for their winter in the library. On the side benches were any number of different Begonias, from the dainty ones with spray-like blossoms to the large-leaved, red-veined Rex. A space about three feet long was filled with asparagus fern.

The Rose House was in fine condition. The American Beauties had splendid long stems with good solid buds, a few even showing just a bit of color. In a short time the gardener would pick at least two dozen a day. The "La France" in their delicate conch-shell pink, along with the yellow "Cloth-of-Gold" formed an exquisite contrast.



This entire house was devoted exclusively to flowers, but along with them can also be grown vegetables of many kinds. Occasionally something happens to some particular variety of rose and they dwindle off, or perhaps you are tired of a certain kind, so to bridge over the time of empty benches you plant tomatoes and cucumbers; even a few melons. If you have never eaten a carefully grown tomato from your own greenhouse you haven't a fair conception of what meaty, delicately flavored fruit is! A garden grown can't compare with it.

This owning a greenhouse is not all a matter of mere pleasure—there's a health element in it. It's one of the most delightful, nerve-soothing, invigorating hobbies imaginable.

LORD & BURNHAM CO., GREENHOUSE DESIGNERS AND MANUFACTURERS.

1133 Broadway, Corner 26th St., New York. -:- Boston Branch: 819 Tremont Building.

CIGARET LUXURY.

A New York man, who recently visited me, writes:

"Ordinarily stale cigaret smoke is very offensive to me, and when I remember that neither your office nor your home had a trace of this, although you smoke freely in both places, I am inclined to think this point of itself sufficient to make your goods the first choice of all particular people."

There is no prejudice against cigarets in any European country. There is no reason for prejudice there, because the cigarets are right. They are made and sold like unto rare wines, by men with traditions of quality to live up to—men with generations of experience back of them.

MAKAROFF RUSSIAN CIGARETS

Americans are rapidly finding out what Europeans have known for a long time—that a Russian Cigaret of high quality is the only one in the world worth the attention of a connoisseur.

Americans are naturally the most discriminating people in the world, once they are given a chance to discriminate. We Americans have been "exploited" on cigarets just as we have on other things. The cigaret business in America never has been in the hands of connoisseurs, but in the hands of financiers.

I am offering you now the first opportunity you have ever had to obtain Russian Cigarets, direct, at first hands, in perfect condition, and without any trouble or delay.

These cigarets are made of real tobacco, pure, clean and sweet, and nothing else. They are mild and smooth, and are a revelation in the richness of their tobacco flavor.

They will leave in your office or apartments no trace of the odor usually associated with cigarets.

These cigarets are rolled carefully and perfectly by hand, and encased in the thinnest cigaret paper in the world. The edges are fastened by crimping; no paste is used. Every cigaret is separately examined before shipment, and they reach you fresh and perfectly matured.

We furnish to our regular customers, at no additional cost, special individual cigarets decorated with artistic and original two-letter monogram designs in gold.

They come straight from me to you by mail, postage paid, and at factory prices. Packed in cedar, one hundred to the box.

I will gladly send you full information about these cigarets, but talk is deaf and dumb as compared with actually smoking them and "smoke" is, after all, the final test. My first purpose is to give you a perfect smoke and it pleases me to set aside money considerations until I have done this

I GUARANTEE

that my cigarets will please you. Send me your order for a trial hundred of the size and value you prefer. Try the cigarets—smoke the full hundred if you wish. If you don't like them, say so, and your money will be instantly returned. As to the cigarets, I will take my chances on your giving them to some one who will like them, and who will order more.

I know that American connoisseurs would be quick to follow Europeans in recognizing the absolute superiority in smoking quality of Russian Cigarets.

My March sales were twice those of February, and the sales again doubled in April, and not a single purchaser would take his money back.

You cannot get these cigarets elsewhere. In buying them from me direct, you are assured of the same courteous treatment as though your trade alone meant the whole thing to me.

If you wish to enjoy cigarets at their best, without injury to your health, to your own sense of refinement, or to that of your friends, something ought to be done about this at once.

Tear out the coupon now, and get acquainted with me and with real cigaret luxury.

THE MAKAROFF COMPANY OF AMERICA

(G. NELSON DOUGLAS)

95 MILK STREET, BOSTON, MASS. SUITE 83.

Draw a circle around the price indicating your selection

CZAREVITCH SIZE
Three Values
$2.00, $3.00, $4.00 per 100

CZAR SIZE
Three Values
$2.50, $4.00, $6.00 per 100

Above blends also made in ladies size. Prices on application

Find enclosed remittance for $

in favor of G. Nelson Douglas for which please send me, prepaid, . . hundred cigarettes of size and value indicated hereon.

Name . .

P. O.

MAKAROFF
GENUINE RUSSIAN
CIGARETS

How Much Is Satisfaction Worth To You?

If it is worth the trouble of cutting a coupon, and mailing it, then do it—right away. *We guarantee the satisfaction.* If you don't get it, we *refund your money—without* asking *you* to return any goods.

Makaroff Russian Cigarets are not sold through dealers. They are made and sold by connoisseurs for, and direct to, other connoisseurs.

Americans are rapidly finding out what Europeans have known for a long time—that a *Russian Cigaret* of *high quality* is the only one in the world worth the attention of a connoisseur.

Americans are naturally the most discriminating people in the world, *once they are given a chance to discriminate.* The Americans have been "exploited" on cigarets, just as they have on other things. The cigaret business in America never has been in the hands of *connoisseurs*, but in the hands of *financiers*.

You can smoke MAKAROFF RUSSIAN CIGARETS from morning until night without a trace of that "dopey" or nervous feeling induced by other cigarets. They will leave in your office or apartments *no trace* of the *oder usually associated* with cigarets.

They are made of *real tobacco*, pure, clean, and sweet, and *nothing else*. They are mild and smooth, but rich in natural flavor, and as full of "body" as the most critical connoisseur could wish.

They are made with a mouthpiece an inch and a quarter long, which takes up nearly all of the nicotine, as you can prove for yourself.

The tobacco never comes in contact with the mouth, to become wet and bitter, spoil the flavor, stain the fingers, and to *poison your system* by *direct* absorption of the nicotine which *concentrates* in *the end* of the ordinary cigaret.

They are rolled *by hand*, and encased in the *thinnest* paper in the world. No paste is used.

You can afford to go into this matter thoroughly. You cannot afford not to, if you want to enjoy cigarets at their best, without injury to your health or offense to your own sense of refinement or that of your friends.

We sell direct to *consumers* and first-class clubs, and at *wholesale* prices. Your favorite club has them or will get them for you, if you prefer to buy that way. We will gladly send you full information about these cigarets, but the final and only test, if you are in earnest, is a trial of the goods. We take all the risk of this trial, so there is no reason why you should delay it.

A New Kind of Offer

Send us your order for a trial hundred of the size and quality you prefer. Try the cigarets thoroughly, smoke the full hundred if you like. Then, if you do not like them, tell us and we will return your money. We do not ask the return of the cigarets. We prefer to take our chances of your giving them to some one who *will* like them and who will order more. Send an order *now* and get acquainted with real cigarets luxury.

Clip the Coupon or write a letter enclosing remittance, to

C. L. 5c6

Kompanija Makaroff
Suite 78
95 Milk Street, Boston, Massachusetts

LA CZARINA SIZE, In Four Grades at { $1.00, $1.50, $2.50 and $3.00 per 100

CZAREVITCH SIZE, In Four Grades at { $1.50, $2.00, $3.00, $4.00 per 100

CZAR SIZE, In Four Grades at { $2.00, $2.50, $4.00, $6.00 per 100

Find enclosed ..... for which please send me, prepaid,

Quantity .....

Size .....

MAKAROFF CIGARETS

(Write your name and address in the margin.)

MAPLEWOOD HACKNEY STUD

PROPERTY OF

FREDERICK C. STEVENS, ATTICA, N. Y.

ANYTHING you want in the line of HIGH CLASS CARRIAGE HORSES, ready for use, can always be found at the above establishment. All animals bred, raised, and trained at Maplewood. Registered Hackneys for foundation stock always on hand.

Send for illustrated catalogue just issued.

Address **E. T. GAY, Manager, ATTICA, N. Y.**

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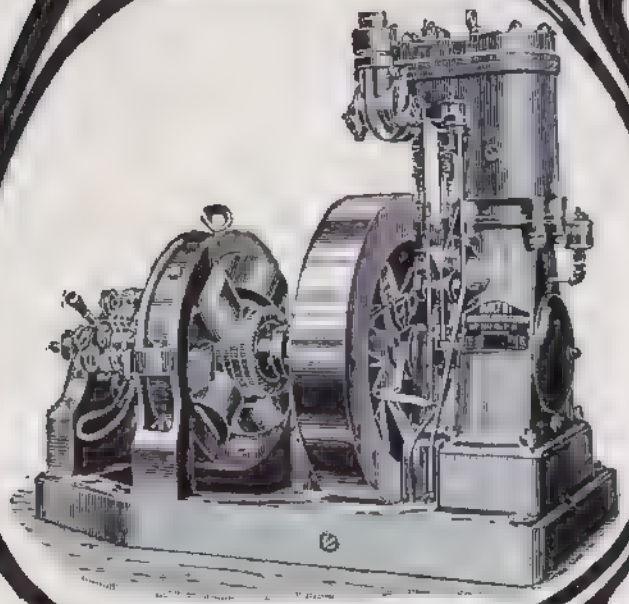
BY THE SECOR SYSTEM

ECONOMICAL POSITIVE AUTOMATIC



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Costs less than half central station charges

No Boiler, Coal or Engineer

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THE MARMON

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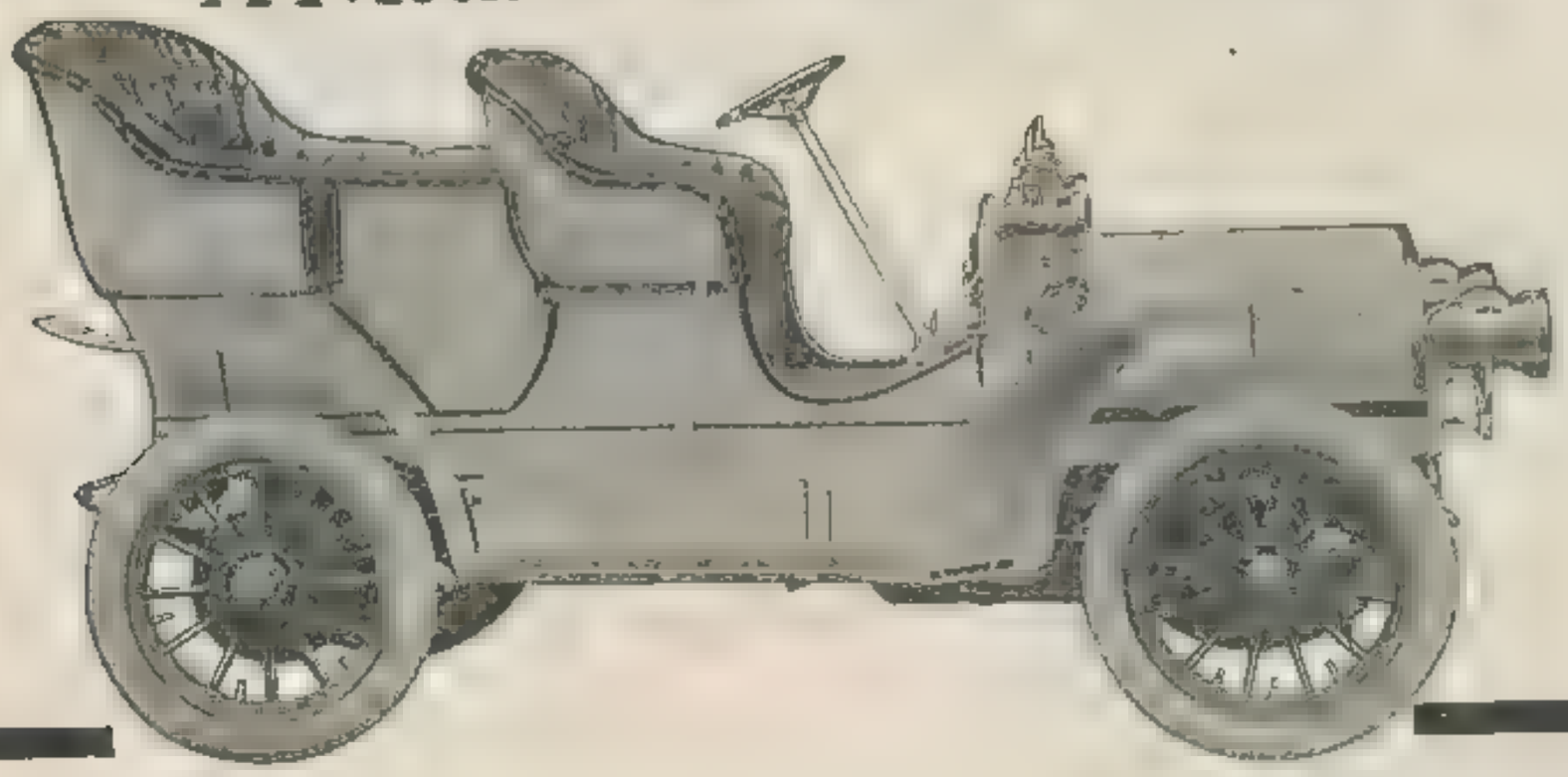

An Object Lesson in Strain

Can you conceive a more severe strain and twist on automobile mechanism than is shown here?

The rear wheel on one side and the front wheel on the other side are each raised over a foot. Note that the other two wheels remain solidly on the ground. In any other car on earth the whole machine would be off the ground, straining and weakening its every part.

But this position is as comfortable as any other position for the Marmon. However much either frame may be tilted, each wheel still shares its proportion of the weight; and the power plant, rigid driving shaft, and rear axle are maintained in perfect alignment.

This is true in the Marmon, and in the Marmon only This picture shows an extreme "rough road" condition. All roads present it in small or large degree.

Whether the road be rough or smooth, at high or low speed, the Marmon owner experiences a luxury of motion that is impossible in any other car, and knows at the same ti ne that the entire mechan'sm is equally at ease, doing its full duty with a minimum of friction.

This elasticity is supplemented by full elliptic springs, but is primarily due to an exclusive patented Marmon feature,

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Luxurious, solid cast aluminum body on one frame, power plant on another frame, each frame suspended on three pivotal points Eliminates the binding and twisting strains inevitable in the rigid suspension of all other cars. Means fewer parts, simpler parts, and less wear on all parts, tires included Permits the use of a straight, rigid shaft drive without Cardan joints.

Double Three-Point Suspension is not to be confused with the "sub-frame" or rigidly fixed "three-point support." It is a pivotal three-point suspension for both frames.

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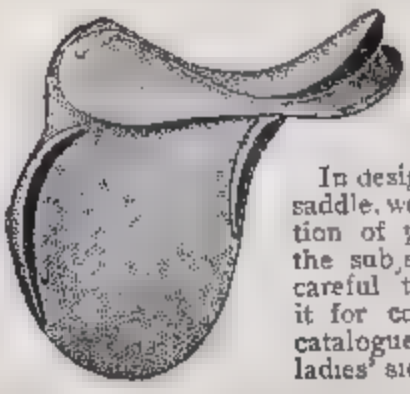

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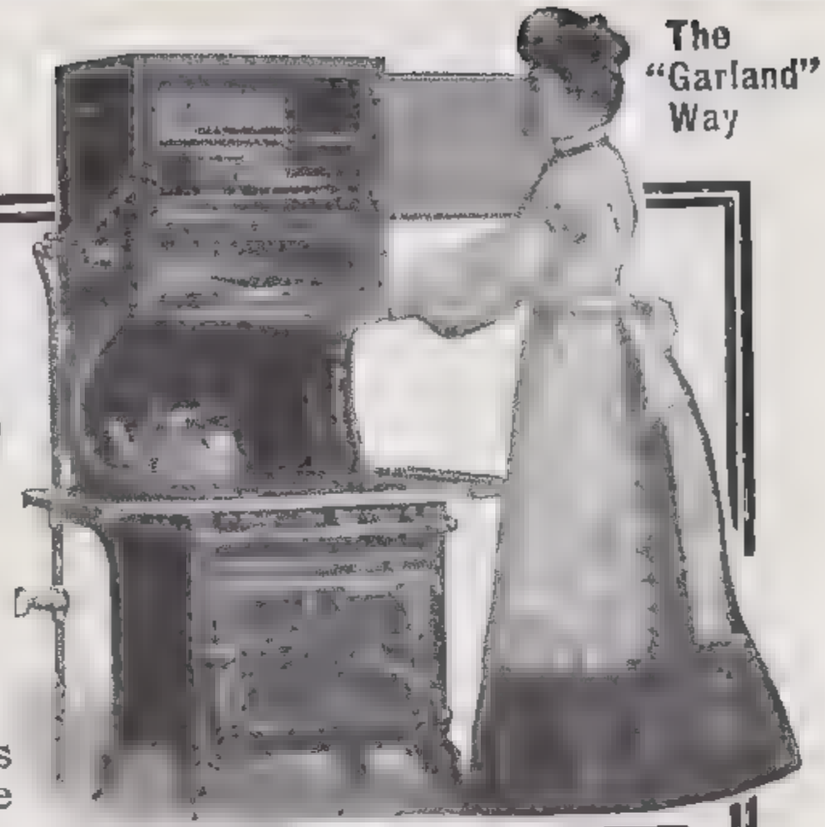

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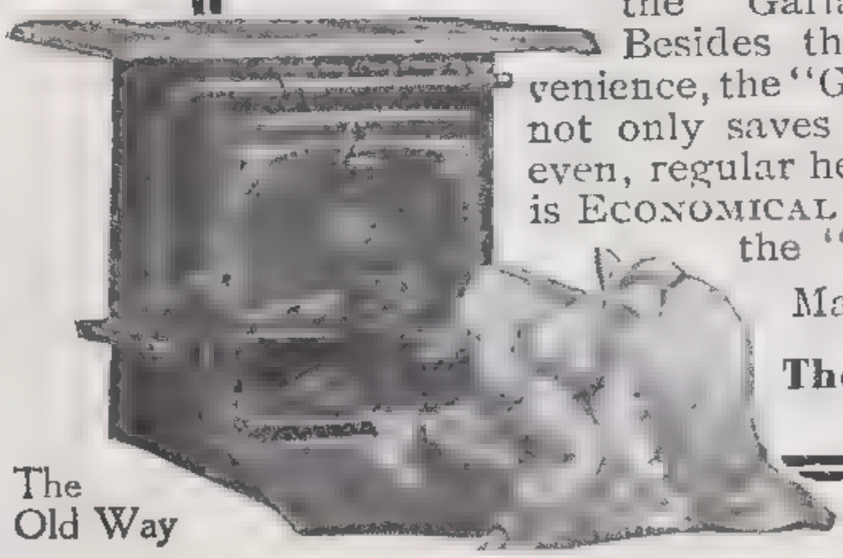

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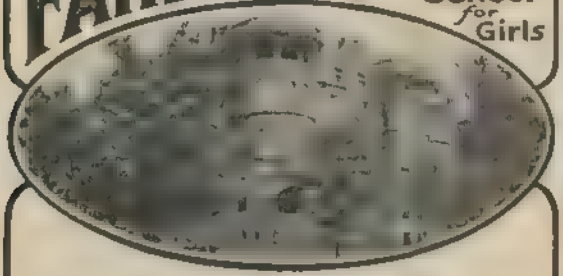

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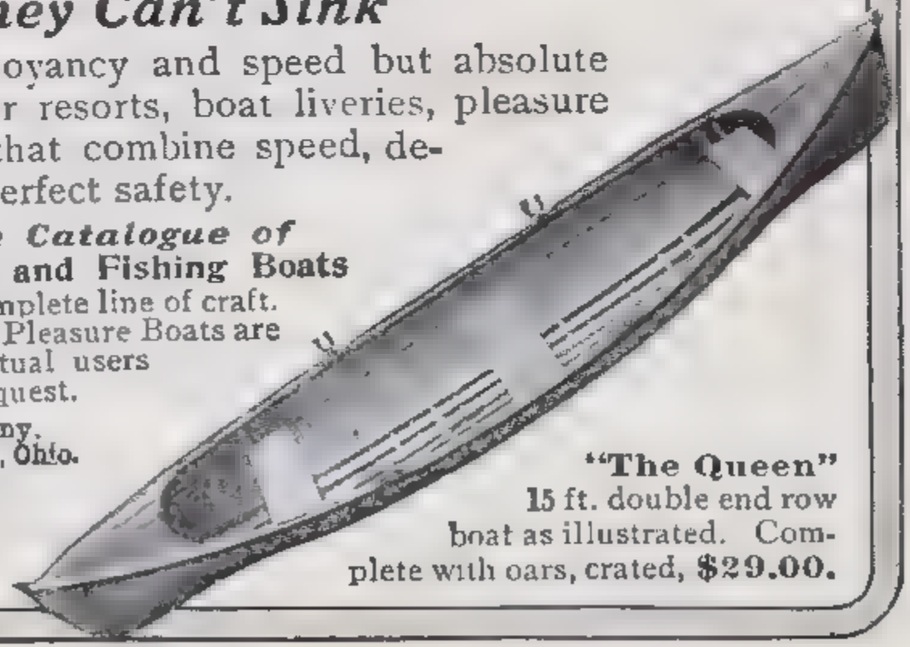

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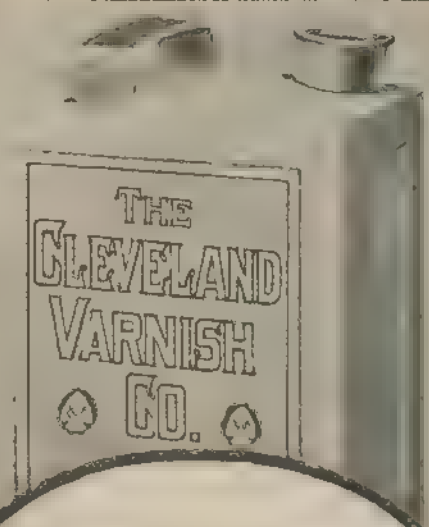

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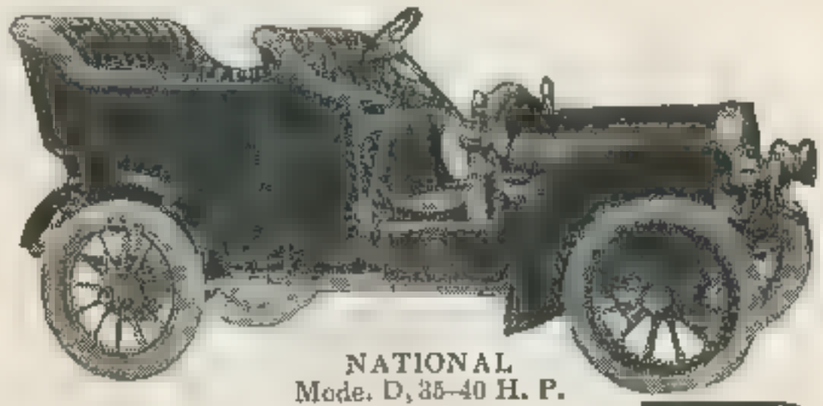

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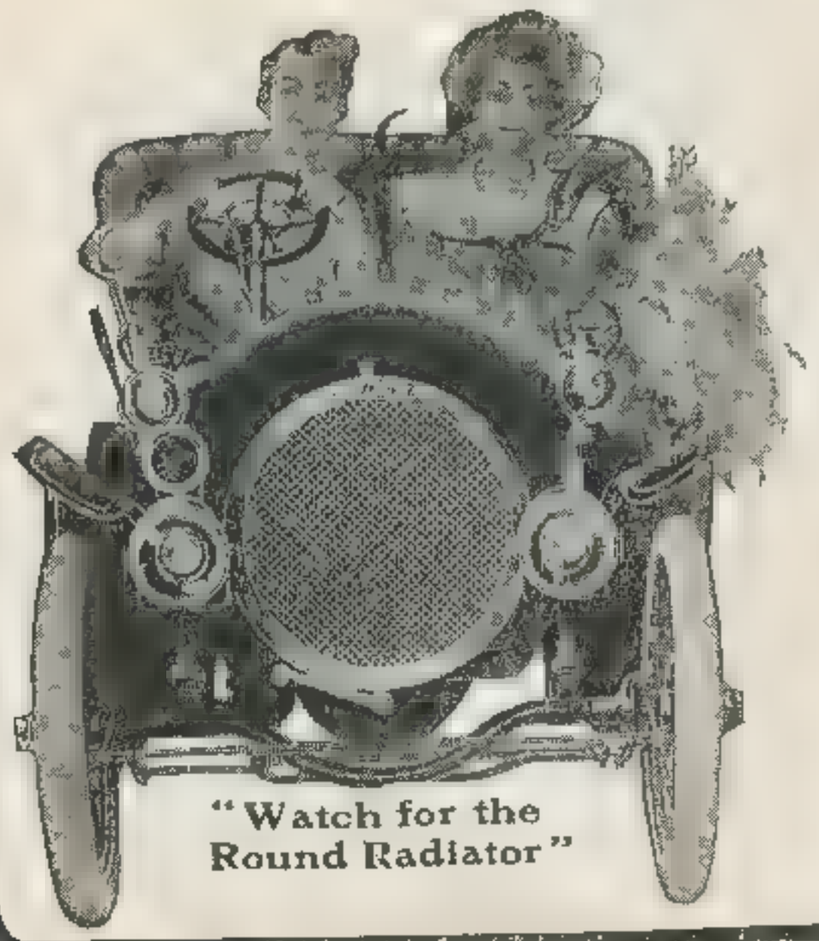

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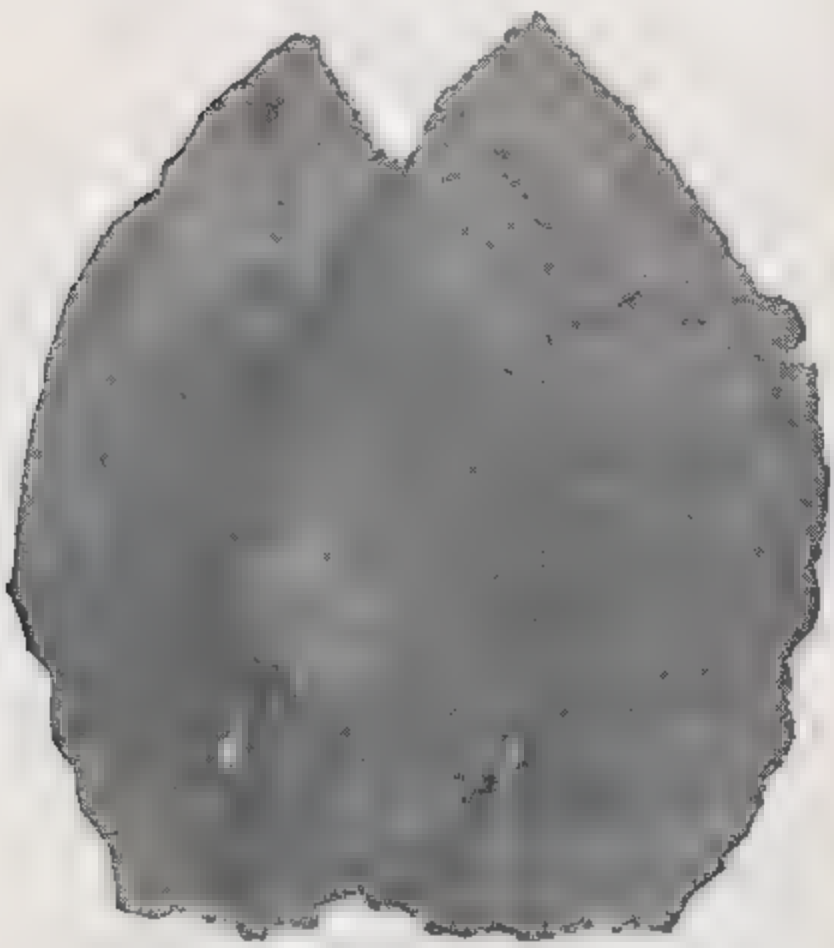

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Send ten 2-cent stamps to pay postage and we will mail you **at once** our **800-page official 1904 book,** with plans, photographs, plates and 8000 designs of **everything** entering into the construction of ***any building.*** It covers **every department.** Stairs, interior finish, mantels, grilles, wood carpet, sash, doors, blinds, art glass, columns, porch work, hardware, etc., etc. Send today for book No. 40.

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20th and Sangamon Streets, CHICAGO.

NEW YORK CENTRAL LINES

In the Adirondack Mountains

A Quiet Picnic in the Adirondacks

The principal hotels have made great improvements during the past winter anticipating an unusually prosperous season, and the indications now are that 1906 in the Adirondack Mountains will be the greatest season ever known.

The New York Central Lines take you to the Adirondack Mountains from Every Direction

For a copy of New York Central Lines Four-Track Series No. 20, "The Adirondack Mountains and How to Reach Them," send a two-cent stamp to George H. Daniels, Manager, General Advertising Department, Grand Central Station, New York

NEW YORK CENTRAL LINES

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New York

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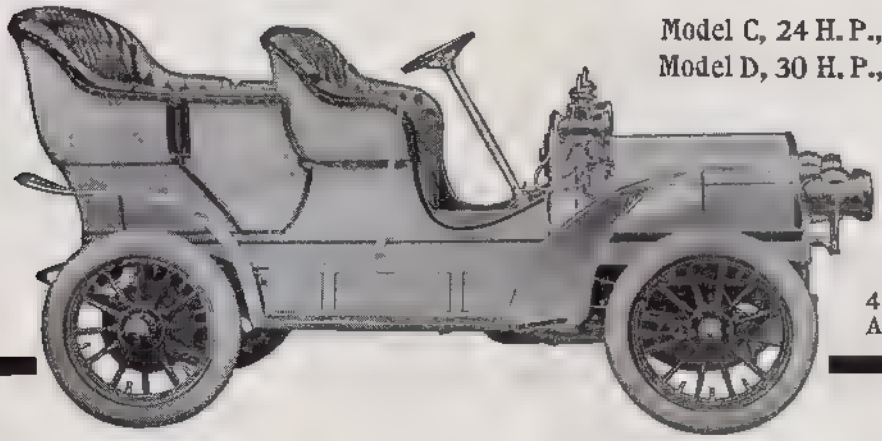
Passenger Traffic Manager
Chicago

NEW YORK CENTRAL LINES

THE MARMON

"A Mechanical Masterpiece"



Model C, 24 H. P., $2,500
Model D, 30 H. P., $3,000

4 Cylinders
Air Cooled

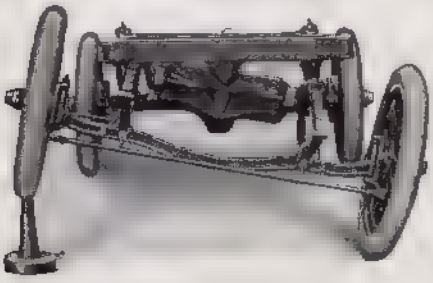
One Finger Controls It

You can fly or you can crawl in the Marmon, on the high gear; drive all day, up hill and down, around corners and through crowded thoroughfares, all on the high gear. One little lever on top of the steering wheel controls the whole range of speed. Control is extremely simple and simply wonderful.

"It beats the steam car at its own game, with very little more noise"—Dr. D. S. Hutchinson, Binghamton, N. Y.

The Marmon motor is an air-cooled revelation, dependable in any climate and under all conditions. Never overheats, no matter how long it is run or under what load. Largely due to the Marmon scheme of air-cooling, and partly to the Marmon oiling system that keeps the engine bearings, crank and piston pin bearings running on a constant film of oil. This oiling system is simple, infallible, has no adjustments, and is extremely economical. Over 500 miles of travel on one gallon of oil.

The Marmon Double Three Point Suspension solves the question of perfect comfort and freedom from "road strain" no matter how rough the road. Easy on machinery and makes tires last longer.



Flexible Running Gear

Rigid Shaft Drive without Cardan joints. Perfect power transmission. Phenomenal hill climbing ability.

Not merely assembled, but made entirely in our factory. Mechanically perfect to the last degree.

Let us put you in touch with a Marmon agent. Write for Booklet "T."

Nordyke & Marmon Co. Estab. 1851 Indianapolis, Ind.

ILLINOIS

SPRINGFIELD,	312 South 5th St.,	W. L. Frost

IOWA

SIOUX CITY,	Fifth and Douglas Sts.,	W. L. Frost

KANSAS

TOPEKA,	Columbia Bldg.,	C. P. Bolmar

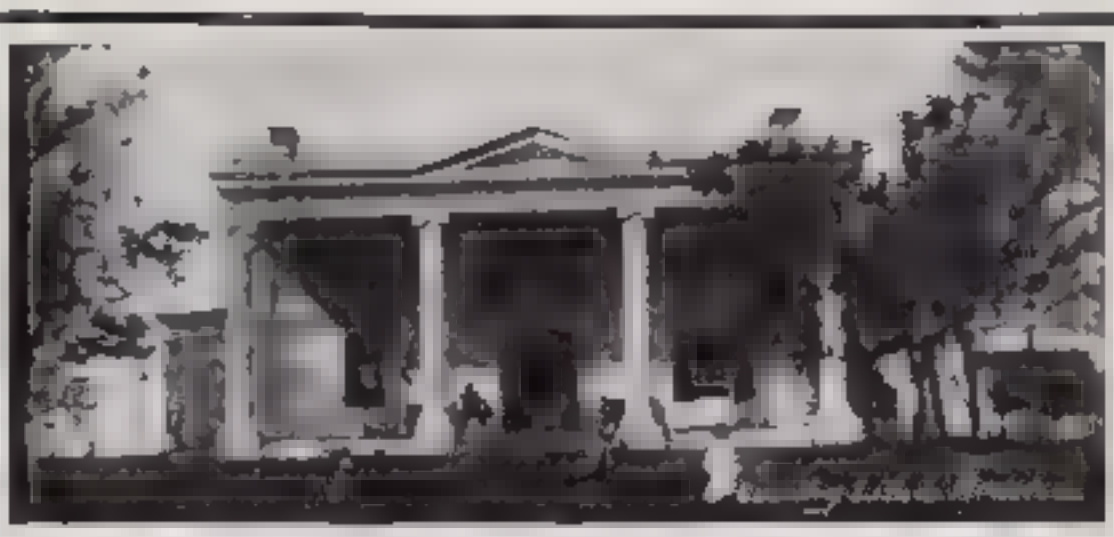
KENTUCKY

LEXINGTON,	Trust Co Bldg.,	McCann & Massie

MAINE

PORTLAND,	First Nat'l Bank Bldg.,	F. S. & E. G. Vaill

VIRGINIA



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Fruit, Stock and Dairy Farms. Old Colonial Estates. Hunting Preserves.

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$8 per Acre and Up

with improvements. Good productive soil, abundant water supply and best climate on earth. Near railroad and good markets, with best church, school and social advantages. For list of farms, excursion rates and our beautiful pamphlet showing what others have accomplished, write to-day to F. H. LA BAUME, Agrl. and Indl. Agt., Norfolk & Western Ry., Box D2, Roanoke, Va.

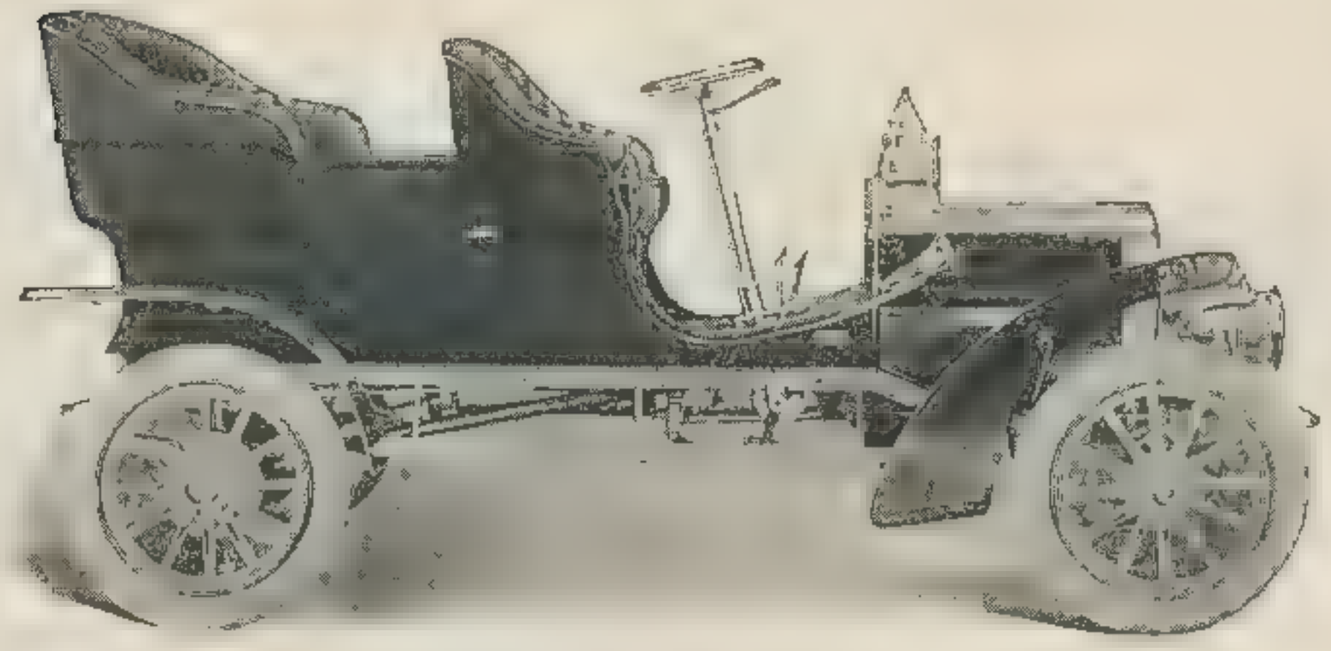
N&W RY. NORFOLK & WESTERN
Virginia and Ohio Line

Virginia Water Front

Beautiful and valuable Colonial estate, 800 acres, fronting over a mile on lower Rappahannock river. Dwelling commands extensive and charming view. Valuable oyster beds and all attractions of the water. Desirable for general farming, stock raising, oyster culture, game preserve, and home for gentleman of leisure. Daily steamer, to and from Baltimore

V. K. SMITH, Topping, Virginia.

Wide,
Roomy
Tonneau



No
Side
Levers

The Silent Northern Touring Car

20 h. p., double opposed motor, four inch tires. Completely equipped, $1800 f. o. b. Detroit

NORTHERN

"The silent, dustless car"

Best for City driving or Country touring. The three-point motor support preserves absolute alignment of mechanism regardless of rough roads and the four full elliptic springs, four-inch tires, and 106 inch wheel base insure comfortable, easy riding with least wear on tires. All mechanism encased, no side levers, no belts, no chains, nor gaskets. No strut rods, nor truss rods—but you should have a copy of Catalog No. 17—Write for it today.

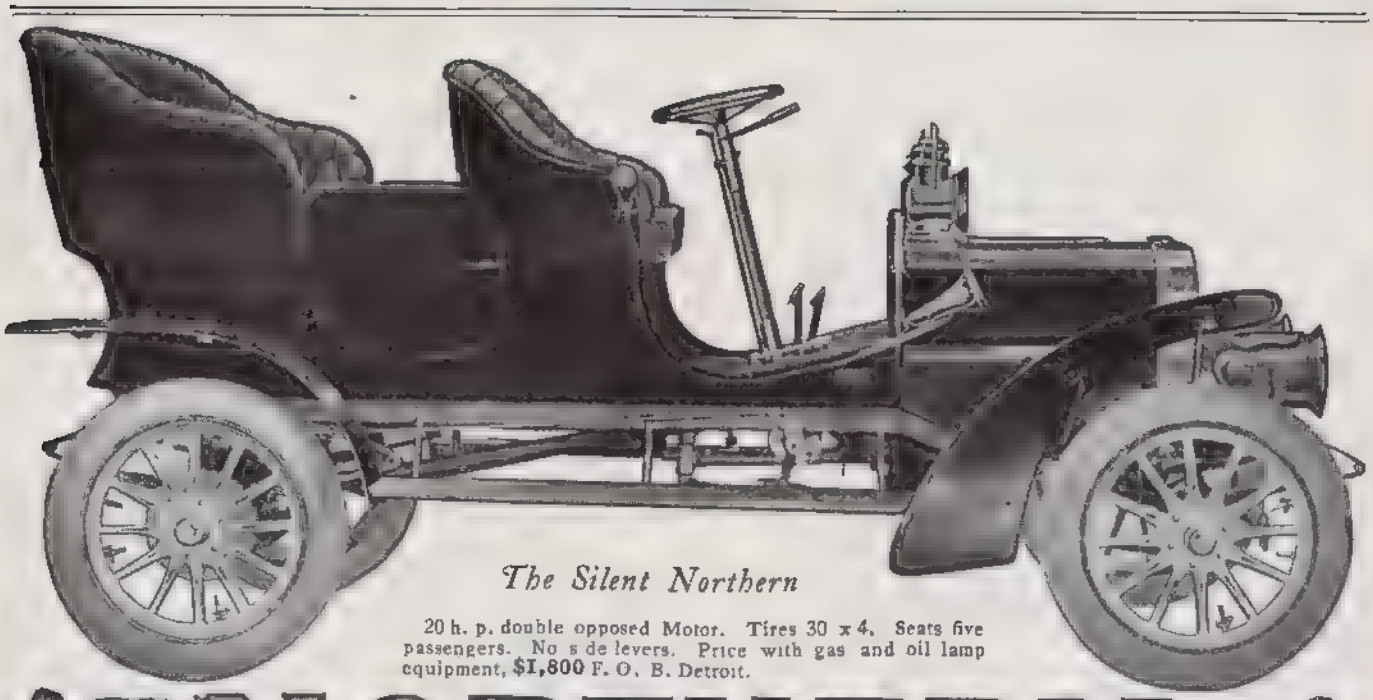
1906 Models:

Sturdy Northern Runabout, 7 h. p., with oil lamp equipment, ... $650
Silent Northern Touring Car, 20 h. p., double opposed motor, with gas and oil lamp equipment, . 1800
Silent Northern Limousine, 20 h. p., with gas and oil lamp equipment, ... 2800
Model K, 30 h. p., four-cylinder car, air controlled and air brakes, with gas and oil lamp equipment, 3000

Northern Manufacturing Co., Detroit, U. S. A.

Member Association of Licensed Automobile Manufacturers

BABCOCK
1906
CARRIAGES



The Silent Northern

20 h. p. double opposed Motor. Tires 30 x 4. Seats five passengers. No side levers. Price with gas and oil lamp equipment, $1,800 F. O. B. Detroit.

NORTHERN

Safe, Silent, Dustless

The Silent Northern is different. It is not a copy of some other car, foreign or domestic, but is *original* from start to finish. It was designed to meet American conditions, and has successfully demonstrated its ability to travel over all sorts and conditions of American roads with minimum wear and tear. The long wheel base (106 inches). four-inch tires, and the four full elliptic springs insure a degree of comfort that is not excelled by any car.

Mechanically the Northern is unequalled. The 20 h. p. double opposed motor is supported at three points insuring correct alignment of crank shaft with rear axle, regardless of road conditions. Mechanism all encased, dust proof, mud proof, and water proof. Control instant, simple, positive. No side levers—all changes made from steering column and pedals placed for quick, convenient action. Lots of room in the luxurious tonneau, all the style that can be produced by the finest workmen in the world, and a quietly operating mechanism not approached by any other car at any price—but write for Catalog 25 tells all about our

1906 MODELS:

Sturdy Northern Runabout. 7 h. p., with oil lamp equipment $650
Silent Northern Touring Car, 20 h. p., double opposed motor, with gas and oil lamp equipment 1,800
Silent Northern Limousine, 20 h. p., with gas and oil lamp equipment 2,800
Model K, 30 h. p., four-cylinder car, *air-controlled* and *air brakes*, with gas and oil lamp equipment 3,000

NORTHERN MANUFACTURING COMPANY, Detroit, U. S. A.

Member Association of Licensed Automobile Manufacturers.

If You Own a Horse

you cannot afford to be without Mr. Ware's valuable work on **"Driving."** The book is a most practical and imformative manual, full of instructions to the beginner and of valuable hints to those who know more of the subject. Beautifully bound, 100 photographic illustrations.

Net, $10.00 (postage 37 cents)

DOUBLEDAY, PAGE & CO., 133 East 16th Street, New York City

The Dustless

The Northern Way

NORTHERN

The Car of Masterful Mechanism.

Here is **the one car** in which you can enjoy a ride of any distance over dusty roads without being bothered by dust.

How is this pleasant result accomplished? Briefly: The extra large fly wheel—24 inches in diameter—has **twelve fan blades,** cast integral, and when the engine is in operation this flywheel-fan sends a powerful blast of air toward the rear of car, counteracting the suction and blowing all dust away from the car. The illustration shows an actual comparison. It's worth investigating.

In hill climbing ability and in all-around reliability the 1906 Silent Northern is far in advance. Our Catalog tells the story of its wonderful mechanical simplicity, its ease of operation and its many other points of superiority which make for comfort and low cost of maintenance. It also illustrates the full line of 1906 models, including

Sturdy Northern Runabout, 7 h p., with oil lamp equipment	**$650**
Silent Northern Touring Car, 20 h. p., double-opposed motor, with gas and oil lamp equipment	**$1800**
Silent Northern Limousine, 20h. p., with gas and oil lamp equipment	**$2800**
Model "K" 30 h. p., four-cylinder car, **air-controlled** and with **air-brakes,** with gas and oil lamp equipment	**$3000**

Let us Send you a copy.

NORTHERN MANUFACTURING COMPANY

DETROIT, MICH.

Member Ass'n of Licensed Automobile Manufacturers.

Not a Northern

The

North Coast Limited

NORTHERN PACIFIC
YELLOWSTONE PARK LINE

Is still the crack train of the Northwest. Electric lighted throughout. Pullman first class and Pullman tourist sleeping cars. Dining car, night and day. Observation car, electric lights, electric fans, card and smoking rooms, barber shop and bath room. Clothes pressing service. Library, 150 volumes and magazines and periodicals and all the little luxuries that go to make a comfortable and pleasant trip, East or West.

Would You Like

Copy of "North Coast Limited" booklet, free for the asking.

Would You Like

Copy of "Wonderland 1906," sent for 6 cents postage.

Would You Like

Panoramic View of Yellowstone National Park, mailed for 35 cents.

Have You

Friends or relatives in the East that are contemplating coming to the "Golden West," if so, send name, full address and we will have them furnished proper literature and full information for the trip.

ANY OTHER INFORMATION desired regarding rates, routes, sleeping car reservations, etc., apply to any Agent of the Northern Pacific Railway, or to

A. D. CHARLTON, Assistant General Passenger Agent
255 Morrison St., Cor. Third, Portland, Ore.

"See America First"

but first of all see

YELLOWSTONE NATIONAL PARK.

It's America's first scenic and recreation region, the place to go to for a week, a month, or the season. Enjoy the finest coaching trip in America and the study of wonderful natural phenomena. See "Wonderland" while en route to the great Puget Sound Country on summer rates *One-Third* lower from St. Paul and Minneapolis than usual. The Round Trip for

SIXTY DOLLARS

From Chicago $75.

Write for "WONDERLAND," sent for Six Cents, and full information

Northern Pacific Railway.

A. M. CLELAND, General Passenger Agent, St. Paul, Minn.

"In all the World no trip like this"

The Great Lakes of America

NORTHERN STEAMSHIP COMPANY

SS. NORTH WEST
Leaves Buffalo Saturdays and Duluth Tuesdays.

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Leaves Buffalo Wednesdays and Chicago Saturdays.

AMERICAN OR EUROPEAN PLAN

To all lake resorts, including Mackinac Island, Sault Ste. Marie, Marquette, Houghton, Duluth, Harbor Springs, Milwaukee, and Chicago

Tickets Optional (Rail or Steamship)

SPECIAL EXCURSION RATES

Write for particulars. **W. M. LOWRIE, G. P. A. 379 Broadway, NEW YORK CITY**

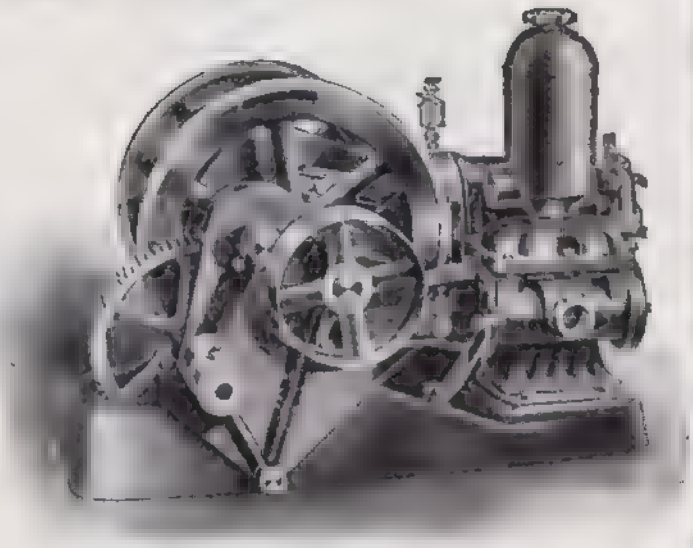
OLDS Engines

Power for Country Homes

¶ We make a specialty of Engines for Country Homes, Farms, etc. (pumping water for house and lawn, running electric light plant, doing farm work). On account of their simplicity and durability they are the most economical in every way, and repairs cost practically nothing--any inexperienced, intelligent man can keep one in perfect order.

¶ Let us make you (without charge) an estimate on an Olds Engine and pump and pulleys for your requirements--simply tell us everything you need power for.

¶ Handsome Catalog No. 10 mailed FREE--showing our Wizard Engine, 2 to 8 h. p. (jump spark ignition system as in the famous Oldsmobile) and other engines and Gas Producers up to 150 h. p.



Olds Gas Power Co.

formerly

Olds Gasoline Engine Works, 944 Chestnut St., Lansing, Mich.

For the Farm or Country Home

We make a specialty of Gas Engines for doing general farm work, running electric light plants, pumping water for house, stock and lawn.

Let us make you (without charge) an estimate on an

OLDS GAS ENGINE

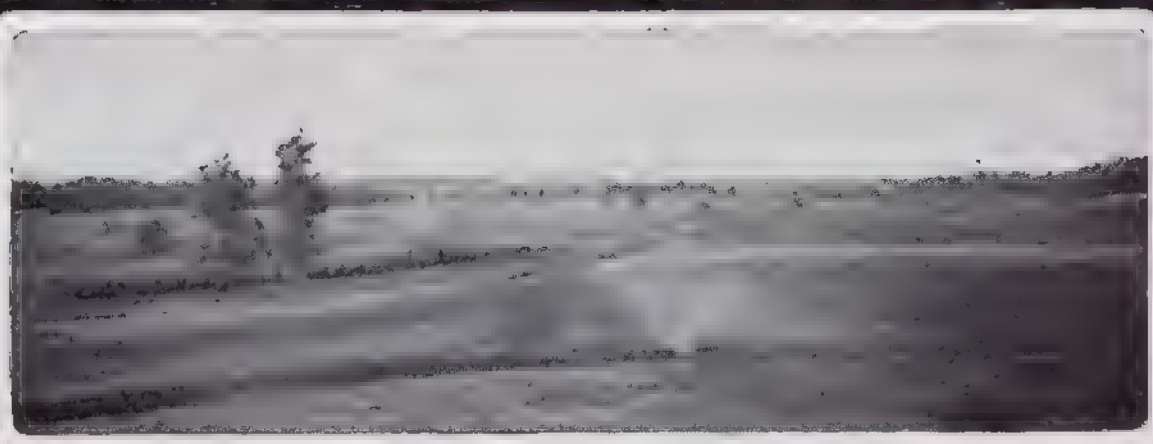
with pump, etc., for your requirements. Simply tell us everything you need power for.

Catalogue No. 10 will be mailed promptly on request—it shows type of engines from 2 to 1200 h. p.

We also make Pintsch Producer Plants for all purposes.

OLDS GAS POWER CO.

944 Chestnut Street LANSING, MICH.



AT OLD FAIRFIELD, CONNECTICUT

A charming country home with old-fashioned garden, big trees, generous greenhouse and stable, and a mansion that is most inviting. The house has 18 rooms, three baths, quartered oak floors and all modern conveniences; newly painted and carefully kept, the house is in excellent condition. Gasoline lighting plant. Pure running water at 75 pounds pressure.

Four acres of land so planned that a vista of greenery or garden can be had from all points of view from the house.
This property is most conveniently situated, being ½ mile from the New Haven Road station and ½ mile from one of the finest beaches on Long Island. Send for illustrated booklet giving full particulars.

WHITEHOUSE & PORTER, 573 Fifth Avenue, NEW YORK

OLD HICKORY SPINDLE BACK CHAIR $1.75

Guaranteed most serviceable, comfortable, attractive Chair for Porch and Lawn use ever sold at this remarkably low price. Will stand all sorts of weather. Solidly constructed of genuine white hickory with bark on. Seat 18 inches long, 16 inches deep; height over all 40 inches. Price, $1.75, freight prepaid east of Mississippi River. 120 other styles of Chairs, Settees, Tables, etc., $1.50 up.

"The furniture purchased from you arrived safely, several days since. It is simply grand, and we are more than pleased with it." L. E. McLAIN, Canon City, Colo.

"The Old Hickory Chairs reached us O. K. last Saturday, and to use Mrs. Wile's expression: 'We are tickled to pieces' over them. They are the pride of the neighborhood I think I shall want another piece of your artistic furniture later. Many thanks for your favor to me." ERNEST P. WILES, Muncie, Ind.

"We are more than delighted with your furniture. Please send catalogue to my cousin, Mrs. Geo. Hull, Tuxedo Park, N. J." MRS. HOWARD TRACY, Evanston, Ill.

"Chairs arrived O. K. We think they are fine and cannot be equaled anywhere." J. W. STUART, Braddock, Pa.

Be sure to get the **"Old Hickory"** Furniture and see that our trade-mark is on every piece. If your dealer will not supply you, remit direct to us. Ask for new 48-page illustrated catalogue and our

Special Introductory Offer FREE.

Style No. 24.

THE OLD HICKORY CHAIR CO.,

65 Cherry Street, - - - - - Martinsville, Ind.

"The Original 'Old Hickory' Furniture Manufacturers."

The 1907 Model M.-M. Motorcycle

Specifications of Model M. M.—Price $175

Frame	Seamless steel tubing, reinforced at head.
Forks	Truss pattern, spring cushion sides.
Wheels	28 inch Steel rims, heavy swaged spokes, Corbin hub.
Tires	2¼ inch heavy corrugated tread, G. & J. detachable 2½ inch $3.00 extra.
Power	3 H. P. M.-M. Motor, bore 3⅛ inch, stroke 3⅛ inch.
Carburetor	Triple air inlet, automatic adjustment.
Muffler	Expanding chamber, tubular exhaust.
Ignition	Jump spark for 3 batteries 2½ x 6 and 4 terminal coil.
Transmission	1¾ inch double belt, flat endless, mineral tan.
Reservoir	Tubular seamless brass, 5 quarts gasoline, 1 quart oil.
Gear Ratio	4½ inch to 1, driving pulley leather covered.
Lubricator	Automatic force pump in tank operated from rider's seat.
Control	Double grip on handle bar, right side throttle, left side spark.
Handle Bar	7 inch raise 12 inch back.
Speed	5 to 50 miles an hour.
Weight	For road 140 lbs., for racing 110 lbs. Wheel base 51 inches. Weight crated for shipment 190 lbs.
Finish	Black enamel, nickel trimmings.
Price	$175. Terms ¼ cash with order, balance on delivery.

AGENTS! The 1907 M.-M. Motorcycle is emphatically the best proposition of the season. Get in line at once, and secure the agency for 1907.

AMERICAN MOTOR CO., Brockton, Mass.

The 1907 MODEL
M. M. MOTORCYCLE

Is already Winning Laurels

Looking at it from a common sense standpoint, what better could you ask for a road performance than that made on Labor Day by the only two riders of the 1907 model M.-M. Motorcycles entered in the N. A. M. 150 mile Reliability Run?

The first hundred miles were covered mostly through mud in a heavy rain; so much so that many riders either refused to start or soon abandoned the run.

The first round of one hundred and fifty miles was covered in exactly seven hours. So enthused were the riders of the new model that they decided to go over the same course again, stopping thirty-five minutes for dinner. The second round was covered somewhat faster until darkness overtook the riders, so the last thirty-five miles were ridden at a moderate pace. The entire three hundred miles were ridden in fourteen hours, thirty-two minutes, the longest distance ever ridden on the road in one day on a motor cycle, without touching a wrench or screw driver to the machine.

When you consider that one of the riders was a mere lad but thirteen years old who had never ridden more than thirty miles in one stretch before, there must be something in our claim that the 1907 model M.-M. is the most reliable, most comfortable, easiest controlled and most convenient motor cycle to handle.

Look at the cut and read the specifications. Convince yourself.

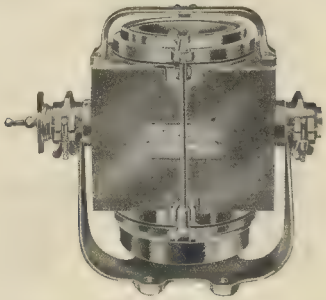
Speaking of reliability, we want to mention another remarkable performance by our Model D 1906 machines. In the twenty-four hour motor-paced contest on the Revere Track on Labor Day, James Moran and his team won the contest, riding over five hundred miles. Two regular road model D machines were brought on to pace after the French machines were put out of the business by the hard, steady work. Moran at first was skeptical and feared that he might lose his position which was on even terms with the leaders. Much to his surprise, however, the model D's not only maintained his position, but through their steady, consistent work commenced to gain laps on the field and finally landed a safe margin for the winners, having paced almost continuously the last four hundred miles.

AMERICAN MOTOR CO., Brockton, Mass.

New "Neverout" Patent Invertible Gas Producer.

Rose Mfg. Co., 911 Arch street, Philadelphia, have, in their new "Neverout" Invertible Gas Producer, an attractive proposition. It is about as simple in operation as can be imagined besides possessing the further advantages of being economical of carbide and of few parts, all strongly made and durable.

The Rose Mfg. Co. are also offering some new lamps for 1906. One is their "Neverout" Condenser-Mirror Lens Headlight, an exceptionally high grade, well constructed lamp. It is provided with a bull's eye condenser lens held in front of the burner by means of a strong brass bracket or spider extending from the flange inwardly. The feature of this part

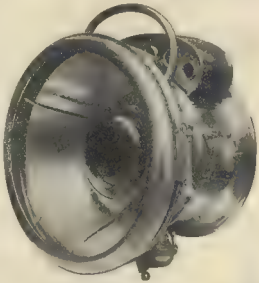


"Neverout" Patent Invertible Gas Producer.

producing and shutting off gas instantly. It is entirely automatic in its action. A half revolution of the device turns on the gas and instantly starts generation of gas. When the device is revolved back to its original position; that is, inverted, the gas is immediately automatically shut off and generation of gas stopped at once. This is accomplished by means of an automatic valve, which cuts off or turns on the gas, and the fact that in inverting the device the contact between the wet carbide and the dry is immediately broken.

The "Neverout" Gas Producer is swung on an axial bracket, as shown in the cut, and can be conveniently rotated. It is constructed on an entirely different principle from that of the ordinary generator. The carbide container is a metallic cylinder with plain surfaces. When the gas is turned off, the water is automatically at the same time also turned off. Conversely, when the gas is turned on (by revolving the device) the water and carbide are again brought into contact. One motion only—a half revolution of the device—is needed to start or stop generation and to turn the gas off or on, and there is no cock or valve to attend to. A very great advantage of this gas producer is the fact that there is no waiting for gas to generate. Another is the fact that it is so simple and absolutely automatic in its action that the most careless or inexperienced user cannot use it wrongly or make any mistake with it. It is put together in such a manner that one or two turns of two butterfly nuts disassembles or reassembles the whole thing, which consists of but

is the fact that a much more substantial bracket is used than ordinarily. Back of the flame is a mirror lens reflector and the combination gives a widely diffused light showing up the whole roadway, as well as a strong condensed gleam extending far ahead of the car. The lamp is made of solid brass, highly



"Neverout" Condenser-Mirror Lens Headlight made in two sizes 8-inch front (No. 140) and 11-inch front (No. 141)

polished, and there is not a single soldered joint in it. Two sizes are offered, one nine inches across the front, catalogued as No. 140,

and one eleven inches across, catalogued as No. 144.

They also have an improved side oil lamp with mirror lens reflector and fitted with a double convex ground lens in the side, giving a very brilliant effect. An oil side lamp with mirror lens reflector is unique, and the Rose Manufacturing Company are finding a big sale for it. This lamp is known as No. 80. It has their patent oil fount clamped in position, the clamping sealing all openings and making oil leakage impossible. It is guaranteed to stay lit under all conditions. In fact, all "Neverout" products are guaranteed under a "money-refunded" warranty. The excellent reputation for high grade goods built up by their many years in the bicycle lamp business is well maintained in their automobile lamps and generators, it being their constant aim to produce the very best possible.

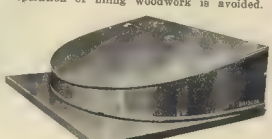
"Neverout" Side Oil Lamp with Mirror Lens Reflector and Double Convex Ground Lens in Side.

Briscoe New Fan and Deck Box.

The Briscoe Mfg. Co., Detroit, Mich., offer to the 1906 trade a new disc fan called Style C. It is designed to be driven by either round or flat belt and can be used on either water or air-cooled engines, as it can be attached to the radiator of the latter. The fan is ball bearing and the distance is lengthened between the bearing cones, thereby increasing the life of the fan and reducing the friction to a minimum. The bearings require no lubrication other than that provided when they are assembled in the shop. A radical change in design consists in the shaft's being stationary. The hub now revolves with the pulley and blades, resulting in added strength and rigidity in the fan structure as a whole. Pulley adjustment along the shaft is obtained as before over wide limits. The blades are of new and highly efficient design, drawing the air in the most advantageous way for the apparatus with which the fan is intended to be used and avoiding the necessity of providing either blade tip bands or housing. The blades have rounded edges. The Briscoe 1906 steel deck box, differently designed, to fit various runabouts, are made both plain and beaded. They are light, practically indestructible, proof against warping, and being designed on pleasing lines they add to the general appearance of the machine.

The Briscoe 1906 Style C Fan.

The cover is locked down by means of sliding doors which extend from side to side, thus avoiding a tendency in the metal to produce a rattle or hum. Flush locks with flat keys are provided in addition when desired. By using metal for this construction the costly operation of filling woodwork is avoided.



The Briscoe 1906 Sheet Steel Deck Box.

Other new products recently added to their line are mud aprons and metal seats. To obtain better facilities for the manufacture of these various outputs the Briscoe Co. have recently occupied the two-story brick building of about 15,000 square feet, formerly used by the Wheeler Mfg. Co. A new department has recently been installed for the manufacture of enameled fenders and almost quadruples their former capacity.

"Bennett" in Tan, Black and Gray Wool Crash.

ed. Made from Shaw's August leather, richly lined with beige silk serge. Price, $3. In gray wool crash with leather inserts, $2.50.

The "Mosler" 1907 Model Timer

The accompanying cut illustrates the 1907 model "Mosler" timer, manufactured by A. R. Mosler & Co., 163 West 29th St., New York city. With the exception of specially designed flat springs, there is practically no changes in the 1907 model from the former model described in our March issue. The Timer has ball bearings thruout. Requires no adjustment, tho provisions have

The "Mosler" 1907 Model Timer.

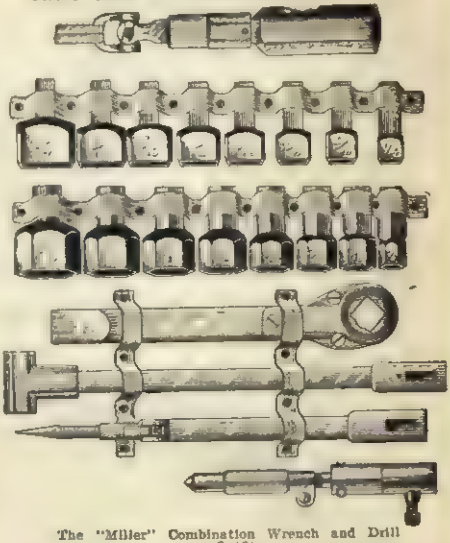
been made for tightening the ball bearings. The adjustment of the hardened tool steel contact pins is made thru the medium of small washers which are placed under the pins. When all the pins wear, and the contact is not sufficient to produce proper ignition, it is only necessary to release the spring, take off one washer from each pin and the timer, is again adjusted, ready to run.

The Bott Bros. Mfg. Co., Columbus, O., are manufacturers of "Nays" Polishing Compound, a powder for polishing automobile bodies, etc. It is put up in single cans at 50c. a can; ½ doz. lots at $2.60, and 1 doz. lots at $4.50. F. O. B., Columbus, O.

"Miller" Universal Ratchet Wrench, Drill, Etc.

A combination tool of apparent merit has recently been placed on the market by Miller Combination Wrench & Tool Co., of Syracuse, N. Y. The set complete includes a ratchet wrench handle or stock, ratchet drill attachment, universal joint, screw driver, long and short extensions, T for socket wrench, wrench sockets, square and hexagon, ¼ to ¾-inch, graduated by sixteenths, and a small socket for removing spark plugs nuts, the whole contained in a canvas case or box, as desired. The complete set, polished, lists at $10; unpolished, at $9 50.

These tools are made of silver metal,



The "Miller" Combination Wrench and Drill Outfit

which will spring before it bends, and will bend before it breaks, being almost as strong as steel, besides being rust-proof. The ratchet wrench serves to screw or unscrew a nut, it being only necessary to turn the wrench over in order to reverse the motion. The shank of the drill attachment takes either round or square shouldered drills or taps, as it has a square opening fitted with a set screw. The ratchet friction feed is adjustable.

Besides the ratchet tool, the outfit also provides a T socket wrench which can be made into three different lengths by use of the long and short extension pieces. It can also be made into an L wrench by using the universal joint. This combination makes it possible to get at bolts and nuts in any part of the car.

A part of the outfit which appeals particularly to automobilists is the small socket for taking out spark plugs nuts, which can also be used for removing any ½-inch hexagon nut or bolt.

shown in Figs. 1 and 2, the key having two metal knobs, H1 and H2, which are pushed outward so far as the contact walls of the switch will allow. When the key is inserted in the opening E the knobs press against the metal parts and form a circuit. The key may readily be turned in either direction in order to make connection desired. It will be observed that there is no possibility of short circuit; that wear cannot impair the efficiency; that the key is readily removable, preventing while withdrawn, the closing of either circuit controlled by it and the use of the machine to which it is attached; that there is no possibility of the failure of adjustment or of slipping; that the operative parts of the switch are visible and do not require removal for cleaning.

"Shawmade" Automobile Caps

Some of the latest styles of a very large line of caps manufactured by Ora D. Shaw, Boston, Mass., are herewith illustrated.

The "Devoe" in blue cloth, is a cap made specially for club purposes, carrying the official insignia of the club upon its front. The cut shows a cap used by the Bay State Automobile Association, made of blue broadcloth, with patent leather moulded

"Devoe." in Blue Cloth.

visor and fitted with patented "goggle effect" inserts. Monogram embroidered in gold. Emblems can be furnished in gold, silver or silk combination. Its price is $3.

The "Esther" is a ladies' motor hat. The crown is of light-weight August leather, the under brim, band and button are of velvet in a harmonizing color or in tasteful con-

"Esther" in Leather and Velvet.

trast. Tan leather, with brown velvet, makes an excellent combination, but can be furnished in any colors desired. Price, $5.

The "Benedict" is made with a fabric body and the leather visor carries an embossed design. Made in Russia crash, corduroy, khaki, army cloth, white duck, etc., with either black or tan visor and strap. Price, $1.50.

The "Harlem," made in pearl and wool crash, fancy mixed suitings or rain cloth, $2. Shaw's August leather, $3. Combinations of cloth and leather, $2.50.

Fancy Visor "Benedict" in Russia Crash.

The "Faxon" is made specially for racing use. Made from Shaw's August leather.

"Faxon" in August Leather.

The crown drops flush with the eyebrows, and there is absolutely nothing to catch the

"Harlem" in Wool Crash and Leather.

wind. It is fitted with wind protectors for the ears, which open at the back. Price, $4.

A notable feature of the "Bennett" cap is the ornamentation of the front by two inserts called the "goggle effect." Generally the inserts are ordered in a contrasting color; for instance, a tan leather cap with black leather makes a good combination. The soft crown may be dropped over the visor to avoid wind resistance when riding fast, or pushed erect and smartly dent-

MECHANICAL AND TECHNICAL Department

EDITORS

Gasoline vehicles—Chas. E. Duryea, Duryea Power Co., Reading, Pa.
Steam vehicles—J. A. Kingman, Locomobile Co. of America, Bridgeport, Conn.
Motor cycles—Chas. H. Metz, Waltham, Mass.
General Construction—V. V. Torbensen, Torbensen Gear, Inc., New York.

(We desire our readers to make full use of this department by asking our department editors for advice on all subjects connected with automobiles. We will also grant full use of our columns to those who disagree with the views and opinions expressed in this department.)

NOTICE—Matter for the attention of the Editors of this department should be addressed to the particular editor it is intended for, care of The Cycle and Automobile Trade Journal, and must reach Philadelphia by the 10th of the month to insure insertion in the next number.

Steam Vehicles

BY J. A. KINGMAN

Shelbyville, Tenn., Nov. 18, 1905.

Will you kindly inform me what is the size of the bore in the head plates for the copper tubes in the standard Mobile and Locomobile 14 inch copper boilers. Also the exact outside diameter of the tubing used therein, and would like to know what parts of an inch the thickness of tube wall is, as I am not posted on thickness by gauge.

I ask this information so as to intelligently judge when it is advisable to reinforce by thimbles or replace any tubes that may have been made too thin by previous expansions. And would like to also know what is the proper taper to give in making an expansion punch. I think to successfully expand a tube that this is necessary.

When a tube has been expanded to that extent that at the edge or mouth of fire end of tube it is just ½ inch in diameter or will admit a half inch tool. Then is it not advisable to replace or reinforce.

S. W. GARRISON.

The holes drilled in the boiler heads for the copper tubes are 33-64 in. in diameter reamed with a taper reamer (⅝ in. to the foot taper.)

The outside diameter of the tubing is 33-64 in., and the thickness of the wall of the copper tube is almost exactly 1-20 in., measured in fractions of an inch.

J. A. K.

Newburgh, N. Y., Dec. 4, 1905.

I have a Locomobile Steam Runabout and I wish to carry about 30 pounds of air pressure in order to make it steam properly, but I find that when I carry over 30 pounds, that the fire will burn down and out through the siege at the bottom of the burner. I am unable to determine the cause of this, as I have repaired the burner perfectly, and have adjusted the mixing tube very carefully, and am positive that the trouble is not there. I have thought that perhaps the wind would blow in through the smoke funnel, and down through the boiler, and thus blow the fire down through the burner, and if this is the case, others must have the same trouble, and I would like to know the remedy. Would a pipe leading from the top of the boiler, under the smoke bonnet, and into the exhaust, allowing a jet of steam to blow through the exhaust, remedy this trouble.

I also have another Locomobile, and there is one line of pipe that I cannot account for. On this machine when I received it, there was a pipe leading from the top of the boiler, outside of the smoke bonnet, and entering the water tank, and I am unable to determine whether this was intended to heat the water in the tank, or whether it was intended for a forced draft, and the party had connected it up wrong, by entering the water tank, in place of entering the exhaust. Do you consider it necessary to heat the water in this manner before entering the boiler?

A. W. BOOTHROYD.

It must be that for some reason the gasoline is not properly vaporized so that when you nearly double the air pressure on the fuel, the gasoline is received in the burner in a partly vaporized condition, and thus burns back and causes the trouble you describe.

With everything in good condition, 30 pounds air pressure ought to prevent back firing a great deal better than 30 lbs. air pressure. It may be that the previous owner of the car removed the wire gauze from the tubes leading through the boiler. You do not state whether this is so, and also do not state at what point the automatic operates, which might have some influence in the matter. If you find the gauze has been removed, instead of replacing it run a coil of pipe around the top of the boiler which ought to vaporize the gas sufficiently well without the aid of the gauze and prevent any clogging up at any time.

A forced draft is an excellent thing on the steam cars such as you have, and it might be well to put it on any way. The method of attaching the same has been described several times in the Steam Department in previous issues of this publication.

In regard to the pipe you refer to leading from the boiler to the water tank, would state this was probably put on by the previous owner as a crude means of heating the water tank and possibly to prevent it from freezing in very cold weather. If you examine this closely, you will probably find that the pipe opens into the water tank and the amount of steam can be controlled by the globe valve. A feed water heater is excellent, and almost necessary, and is usually part of the muffler. If your car is an early pattern and is not provided with a combined muffler and feed water heater, you could obtain it from the makers or some supply house.

If the above information doesn't assist you, you might go into details more fully later on.

J. A. K.

November 17, 1905.

I have recently traded my Orient Buckboard for a Mobile Steamer, which the owner claimed had a fire tube boiler new last July that has never been burned. This car is equipped with National Kerosene burner and Ofeldt fuel feed pump.

On my first trip I had no trouble to get up steam

but used it faster than I could make it. I did not know what the trouble was until later when I discovered that the boiler leaked, consequently, I could not keep a hot fire. Whether or not the boiler was burned before I received the car I do not know, but it evidently is burned at the present time and when steam reaches 100 lbs. pressure or over it develops great leaking propensities.

This car, as far as I am able to judge, and also is the opinion of my mechanic, is in good condition, and I wish to know if it would be advisable to install one of the new boilers as advertised on the market, such as the Stuckney Safety Steam Generator, or the Water Tube Boiler made by F. W. Ofeldt. I do not know the cost of either of these boilers but do not wish to spend too much money on my car. Or would you advise me having my old boiler repaired.

The only use I have for an automobile is for pleasure and I prefer steam for its noiseless running and reserve power.

B. H. R.

It would certainly be best for you to examine the boiler and see if it cannot be repaired before you set about replacing it with a new one. It is suggested that you take it to some machine shop and get bid on expanding the tubes, and if it is necessary to replace any of the tubes, get a bid on this work as well. You should explain to the repair man that the operation of expanding the tubes is a very simple one and it is not necessary to remove the boiler from the car, and that by passing a rope around the front axle, the same may be run over a beam and the car lifted back so as to expose the boiler, the burner having been removed, repairs being thus possible without much trouble. A very light tap is sufficient to expand the copper tubes, and it is likely that your car has a hand pump so that it can be tested by cold water pressure, and if it is tight under these circumstances, it ought to be tight when it is heated up. If the boiler has only been burnt out once, it is very improbable that it could not be made as good as new. If any tubes are required, these should be easily obtainable.

J. A. K.

Gasoline Vehicles

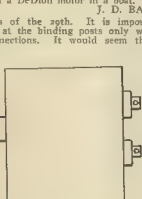
BY CHAS. E. DURYEA

Brockton, Mass., Oct. 29, 1905.

I have a French coil and I do not know how to wire it, will you please mark the wires? I want to use it on a DeDion motor in a boat.

D. BALLANCE.

To yours of the 29th. It is impossible to tell by looking at the binding posts only which are the proper connections. It would seem that terminals



1 and 2 are the high tension terminals and should be connected, one with the spark plug and the other with the engine cylinder to complete the circuit. You do not say whether it is for use on a single cylinder engine or multiple cylinder. B would seem to be the vibrator and not intended for connections, so the circuit from the battery could be tried to the other two. The best way to find out is to run a wire from one high tension terminal nearly to the other and watch the spark jump when you connect the battery to the low tension terminal. By bending the wire slightly you can bring the high tension points nearer or slightly farther away, and if the coil is a good one you should get a spark more than ½ in. long. Sometimes it is necessary to connect one pole of the battery to two terminals or to connect one terminal with another. A few trials ought to get the proper connection.

C. E. D.

Tokyo, Japan, Oct. 29th, 1905.

We shall be very much obliged to you if you will kindly tell in your magazine whether we can make gasoline light vehicle, using the running gears of the Mobile, Locomobile and Toledo steam light cars by improving their motive power.

According to our idea a light air-cooled double engine of horizontal style will suit these gears, making their weight as light as possible, but as we have no experience in such kind of work, we should like to hear your opinion. In case it can, where can we get any suitable engine for that purpose and also what transmission to be applied for? Kindly tell the name of the factory and also, at the same time, tell the factory that we want to buy their goods and to send any particulars.

There are nearly three dozen of the above cars having boilers leaking and abandoned by their owners. Please kindly state how to place the new engine and transmission, etc., so as to enable us to do the work easily.

T. Yoshida, Managing Director. THE SORIN SHOKWAI.

We do not think it good practice to rebuild the average vehicle. This is particularly true of the little light steamers. Their wheels, tubular frame work, sprockets and chains are not suited to larger power and the strains and jerks which accompany a gas engine.

Further, the room required by the average gas engine and transmission gear is more than can be found in the small bodies of the little steam vehicles. If any of our readers have made, successfully, such an exchange as is above suggested, we are sure it will be interesting to hear how it was done.

C. E. D.

Mayfield, N. Y., Nov. 22, 1905.

I have a three-wheel car which I use on the railroad and desire to place a small gasoline engine on it. Car weighs 250 lbs. and will carry four, but two is generally what it carries. Car has roller bearings and runs easy. We have some 2 and 3 per cent. grades to climb and against a heavy wind at times. Most of the manufacturers of small motors want me to use a 3 or 4 H. P. motor, but as I do not care to travel faster than 20 miles per hour on level I do not think I need so much power. Drive wheel on car is 16 inch diameter. Suppose I use a 30 tooth sprocket on drive wheel and a 6 tooth on engine. Then suppose engine runs from 1000 to 2200 R. P. M., low speed will be 9 miles per hour and high speed 20 miles per hour. Will you kindly figure on this and tell me the actual power required to propel car when geared as above, assuming car and four will weigh 800 lbs.? If I use rigid sprockets and 1¼ inch motor cycle chain, will chain stand the strain in starting?

C. E. SHAW.

A 3-inch cylinder ought to be big enough to run your little car. A good size motor bicycle motor will doubtless do it. Most people make the mistake at first of getting too little power. The advice given you is undoubtedly good. Better make your engine speeds a little lower and your cylinder larger. The ¼-inch chain will stand the work all right, but will wear out quickly on such small sprockets. Better make the sprockets larger if possible. The actual power required to propel any vehicle depends more on the vehicle than on the theory. Fifty lbs. per ton, draw bar pull, is usually sufficient, but a faulty

BERKSHIRE AUTOMOBILES

HIGH CLASS TOURING CARS

MADE AND TESTED IN THE BERKSHIRE HILLS

16 H. P. $2,000

25 H. P. $2,500

40 H. P. $4,500

WILL BE SEEN AT THE

AUTOMOBILE CLUB OF AMERICA SHOW

69TH REGIMENT ARMORY

NEW YORK

DOUGLAS ANDREWS COMPANY

SELLING AGENTS

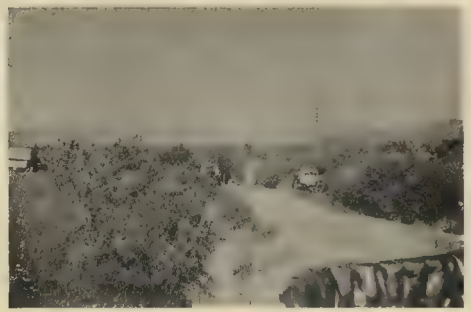
1623 BROADWAY NEW YORK

BERKSHIRE AUTOMOBILES

HIGH CLASS TOURING CARS

MADE AND TESTED IN THE BERKSHIRE HILLS

THE entire output of the Berkshire Automobile Co., of Pittsfield, Mass., is controlled by the Douglas-Andrews Company, 1623 Broadway, New York, and will be handled direct to the customer. No agencies will be placed.



ONE OF THE BERKSHIRE HILLS

DOUGLAS ANDREWS COMPANY

SELLING AGENTS

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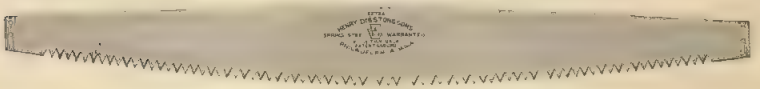
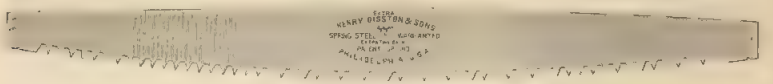
SAWS.

DISSTON CROSS CUT SAWS.



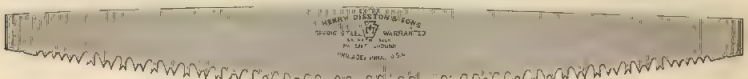
TENON TOOTH.

		4	4½	5	5½	6	6½	7	7½	8	ft.
No. 1.	Spring steel, four gauges thinner on back than on tooth-edge	$2 52	2 84	3 15	3 46	3 78	4 10	4 41	4 72	5 04	ea
No. 2.	Cast steel, two gauges thinner on back than on tooth edge	2 32	2 61	2 90	3 19	3 48	3 77	4 06	4 35	4 64	ea.



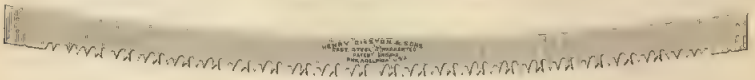
PLAIN OR PEG TOOTH.

		4	4½	5	5½	6	6½	7	7½	8	ft.
No. 1.	Spring steel four gauges thinner on back than on tooth-edge	$2 52	2 84	3.15	3 46	3 78	4 10	4 41	4 72	5 04	ea
No. 2.	Cast steel, two gauges thinner on back than on tooth edge	2 32	2 61	2 90	3 19	3 48	3.77	4 06	4 35	4.64	ea



CHAMPION TOOTH.

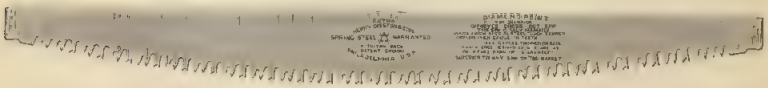
		4	4½	5	5½	6	6½	7	7½	8	ft.
No. 1.	Spring steel, four gauges thinner on back than on tooth edge	$2 40	2 70	3.00	3 30	3 60	3.90	4.20	4 50	4 80	ea
No. 2.	Cast steel, two gauges thinner on back than on tooth-edge	2 16	2 48	2 70	2 97	3 24	3 51	3 78	4 05	4 32	ea.



TRIUMPH CHAMPION.

No. 108. Old style loop handle.

4	4½	5	5½	6	6½	7	feet
$1.40	1.58	1.75	1.93	2.10	2.28	2.45	each.



HUMBOLDT.

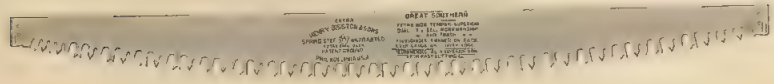
These saws are of even gauge on teeth from end to end, and ground five gauges thinner on back than on the tooth-edge

4	4½	5	5½	6	6½	7	7½	8	feet.
$4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	8.00	each.

Above prices are for saws without handles

SAWS.

SIMOND'S CRESCENT-GROUND CROSS CUT SAWS.

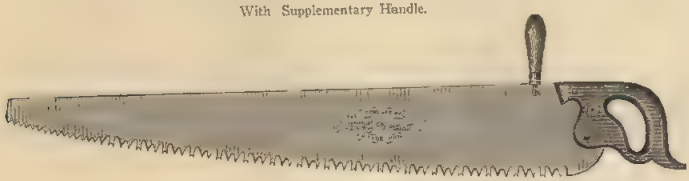


5 feet long.	5½ feet long.	6 feet long.	6½ feet long.
$3.50	**4.10**	**4.80**	**5.50**

DISSTON'S ONE-MAN CROSS CUT SAWS.

Keystone Champion Tooth No. 3.

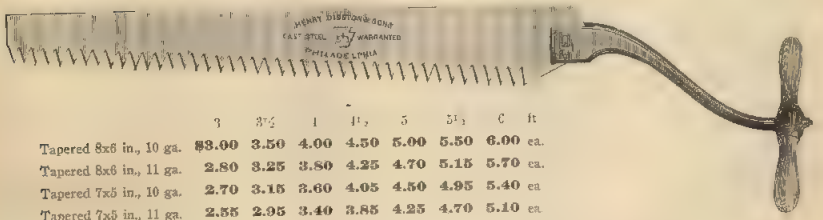
With Supplementary Handle.



3	3½	4	4½	5	5½	6 feet.
$2.10	**2.45**	**2.80**	**3.15**	**3.50**	**3.85**	**4.20** each.

In quarter dozen bundles.

DISSTON'S POND ICE SAWS—Without Tiller.

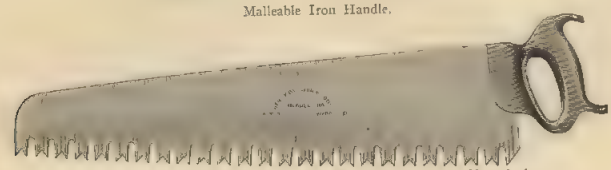


	3	3½	4	4½	5	5½	6 ft
Tapered 8x6 in., 10 ga.	**$3.00**	**3.50**	**4.00**	**4.50**	**5.00**	**5.50**	**6.00** ea.
Tapered 8x6 in., 11 ga.	**2.80**	**3.25**	**3.80**	**4.25**	**4.70**	**5.15**	**5.70** ea.
Tapered 7x5 in., 10 ga.	**2.70**	**3.15**	**3.60**	**4.05**	**4.50**	**4.95**	**5.40** ea.
Tapered 7x5 in., 11 ga.	**2.55**	**2.95**	**3.40**	**3.85**	**4.25**	**4.70**	**5.10** ea.

Tillers complete, as shown above . . . . . Each **$1.10**

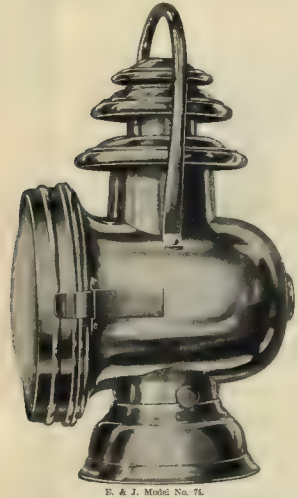
DISSTON'S HAND ICE SAWS No. 72.

Malleable Iron Handle.



24	26	28	30 inches
$19.00	**20.00**	**21.00**	**22.00** Per doz.

irregularities of surface. It is fitted with a mirror search light reflector and can be had with a copper finage if desired, being finished usually in full polished brass, as are the other E. & J. lamps. This lamp is furnished with three sizes of mirror, 5, 6 and 7 ins. in diameter, all three styles being 8 ins. long by 9½ ins. high.



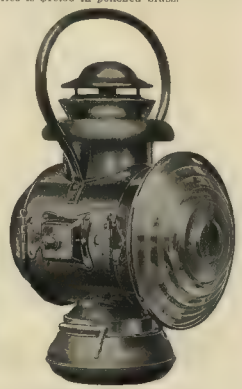
E. & J. Model No. 74.

Number 74 is an oil side lamp in full polished brass made to fit a combination Standard Prop, round or flat. This lamp is 14 inches high and 8¼ inches deep, having a flange 6⅜ inches in diameter.

They are also furnishing an oil tail lamp known as Model No. 75. This lamp is 12 ins. high by 6½ ins. deep, and has a 5-in. flange.

Ham Cold Blast "Tourist" Lamp

C. T. Ham Mfg. Co., 731 Oak Ave., Rochester, N. Y., have brought out a new lamp for 1906 called the "Tourist." The most prominent feature exteriorly in the lamp is the corrugated lens which is said to concentrate the light rays in the centre with the result that the light is carried a great deal farther in advance of the car than the plain lens would carry it. The "Tourist" is being used with great satisfaction on small cars as a head light in place of acetylene lamps, the "Tourist" being an oil burning lamp. It will, no doubt, also be found satisfactory for use on large cars should, for any reason, the acetylene lamp fail to burn. The "Tourist" is 9¾ inches long and 14 inches in extreme height, the bail extending one inch above the top of the dome. The flange is 6½ inches in diameter and the corrugated lens 6 3-8 inches. Price is $10.00 in polished brass.



Ham Cold Blast "Tourist" Lamp.

In general details it follows the same lines as the "Aurora" which has been a regular model with the Ham Company for some time, the corrugated lens being the principal difference.

Baum's Lubricants

Besides the automobile soap which has been previously mentioned in these columns as a product of Baum's Castorine Co. of Rome, N. Y., they also manufacture oil, grease and graphite grease put up especially for automobile use. "Baum's Auto Oil" is especially adapted for gasoline engine cylinder lubrication, having a high fire and viscosity test. Having also a low cold test, it is suitable for use in cold weather or in cold climates. It is put up in two grades of consistency, A and B, for air and water cooled cylinders, respectively; also in "C" grade for steam engine lubrication.

Their "Auto Grease" is made especially for gears and bearings, particularly for those who do not care to use a graphite grease, and is a pure yellow article, clean and smooth. They also have a graphite grease adapted for chain and gear use.

E. Hill, Jr., Norwalk, Conn., has placed the sole selling agency for the Hill gasoline lock valve in the hands of Janney, Steinmetz & Co., Philadelphia.

The "short" fracture shown above, while characteristic of poor oak, happens to show the fracture of poor hickory. The other fracture shows the quality of "Imperial" spokes.

Talks on Wheel Making

No. 5

A bursted tire is robbed of its danger if the car is equipped with "Imperial" wheels.

The asset value of a car only occasionally obtrudes itself upon the attention of a buyer. And yet it is a matter which should give him deep and constant concern. "For what is worth in anything, but so much money as 'twill bring."

This value cannot be maintained if the components of the car are of indifferent design or material. Cheap wheels impair asset values. "Imperial" wheels help in preserving them.

The excellence of "Imperial" wheels is based upon the perfection and refinement of orthodox methods.

Imperial Wheel Company, Flint, Mich.

Selling Agent, HAYDEN EAMES, Cleveland, Ohio

HAYNES

Model "O"—Four Cylinders—Cast in Pairs

Model "O" is very similar to Model "R" in design and appearance; the main points of difference being as follows:—Cylinders cast in pairs; 4¼ in. x 5 in.; 25-30 H. P. Wheel base 97 in., 32 in. wheels, 4 in. tires Speed four to forty miles an hour, on high speed. Room for five passengers. Same body design as Model "R" and contains all other exclusive HAYNES features.

Price, $2250.00 f. o. b. Kokomo.

The cylinders of the **HAYNES** engines are extra large, and the power they develop is far in excess of the rating we give them. They are made of metal exclusive with ourselves, admitting of exact grinding and perfect compression.

The transmission of the **HAYNES** never allows the momentum of the fast moving car to be thrown against the power of the engine with its consequent strain to the entire mechanism, frame and tires; a fault common to all other types of transmission. There is no danger of stripping gears, or of gears climbing out of casing, which constitutes the chief objection offered to large shaft driven cars.

Roller bearings used throughout, give noiseless operation. Large flexible springs insure riding ease, and long life to tires. Simplicity of control, all parts immediately accessible.

The 1906 **HAYNES** body was designed by the leading body maker of Paris. No detail that tends to luxurious comfort, quietness or convenience is lacking. The **HAYNES** is honestly built. The body is of cast aluminum and wood. Grey curled hair and hand buffed leather used in upholstering. All materials are tested for strength and flexibility at double the severest road requirements, and the car must prove its power on a road test before leaving the factory.

These are some reasons why the **HAYNES** gives such satisfactory service at a low cost for upkeep. Others are given in our new catalog, which will be sent upon request. For prompt attention, address

The Haynes Automobile Co.

KOKOMO, INDIANA

Chicago, 1420 Michigan Ave. New York, 1715 Broadway. Members A. L. A. M.

HAYNES

TWO MODELS ONLY FOR 1906

Model "R"—Four Cylinder Touring Car

Roller bearing, vertical engines, cylinders 5¼ in. bore x 5 in. stroke, cast separately; 50 H. P. sliding gear transmission with exclusive device which prevents possibility of burring or stripping gears, and permits instant change from high to lower speeds with perfect safety and without noise. Positive coo ing system operated at very low cost of power. Individual and special lubricators. Carburetor which assures perfect mix ure in all temperatures and under all climatic conditions Master clutch that has no leather surfaces to wear. Takes hold easily and gradually without noise or jerk. Shaft drive. Exclusive universal joints that do away with wear on pins; runs in grease packed housing. One piece nickel steel rear axle with beveled sprocket gear, driven by roller pinion, thrust eliminated, friction reduced, noiseless, all in a bath of oil. Roller bearings throughout. 108 in wheel base. 50 in. tonneau with ample room for two folding chairs. Six to sixty miles an hour on high gear. 34 in. wheels, 4½ in. tires. Weight 2,700 lbs. Price, $3600.00 f. o. b Kokomo. Full head and tail light equipment. Horn and tools.

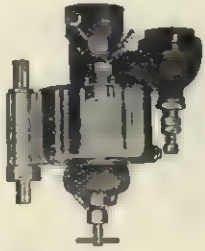
One each of our 1906 stock cars—Models "O" and "R" —were driven from Kokomo to New York and Boston and return, with numerous side trips, a distance of almost 6,000 miles, without any difficulty whatever with either engines, transmission or other parts. The rear axle and roller pinion, against which all the strain of shaft driven cars is thrown, shows absolutely no wear to either, although a great portion of the trip was made through sand and mud and over many hills. The model "R" car crossed the Allegheny Mountains via the National Pike, one of the most difficult roads for automobiling in America. The route was selected with the special intention of giving the cars as severe test as possible, and they stood up under conditions that will not be ordinarily required of them.

Every important feature of the 1906 **HAYNES**—roller bearing engines, master clutch, transmission, universal joints, rear axle, sprocket and roller pinion, is exclusive with, and found only on the **HAYNES.**

Every detail has been developed in the **HAYNES** factory, with exact reference to every other part. There is perfect harmony throughout the entire mechanism, which is the reason that there is less than 10 per cent. loss of power between the engine and rear wheels. It is the reason that its cost of maintenance, upkeep and operation is so remarkably low, and that for 14 years the **HAYNES** car has had the unquestioned reputation of being a car of pre-eminently high quality.

Carburetor

THE fact that 23,000 Holley Carburetors have been manufactured and sold in a little over twenty months is a sufficient proof that it is a device of superior merit. More Holley Carburetors are used by prominent automobile manufacturers than all other makes combined. Three cars obtaining perfect scores in the Glidden Tour were equipped with Holley Carburetors Our '07 Model is similar to the Model "E," which gave such excellent satisfaction this season. A number of refinements have been made in detail and a connection has been placed on the bottom of Carburetor to take warm air from the cylinder or exhaust pipe. The new Model is the result of knowledge obtained in manufacturing 23 000 Carburetors combined with ideas of the best Carburetor experts in the world.

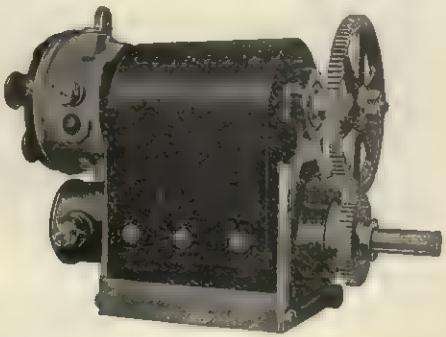


Holley Brothers Co.

675 Beaubien St., Detroit, Mich.

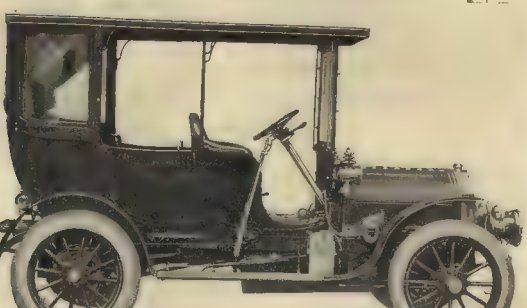
MAGNETO

OUR '07 Full Type Model "K" Holley Magneto is the best ignition device in the world, barring none. We guarantee it in every respect. For several months a number of these new models have been in operation on demonstrating cars and the operation is perfect at all speeds from a slow walk to 50 miles an hour. A successful Magneto must be made regardless of expense and we had this in mind when designing and making Model "K". The highest grade of material obtainable has been used in its construction and every Magneto is tested on a motor before shipment. The wise manufacturer will use Magneto Ignition exclusively for '07, but the manufacturer who does not prepare to offer it as an option will not be in a position to supply a big demand. Write if interested and we will give you particulars regarding the standard base to be placed on motor so that any magneto can be used.



Holley Brothers Co.

675 Beaubien St., Detroit, Mich.



The Great Arrow Victoria Tonneau. 40-45 H. P., with semi-enclosed top and sliding glass front.

PIERCE

Specifications for the 40-45 H. P. Car

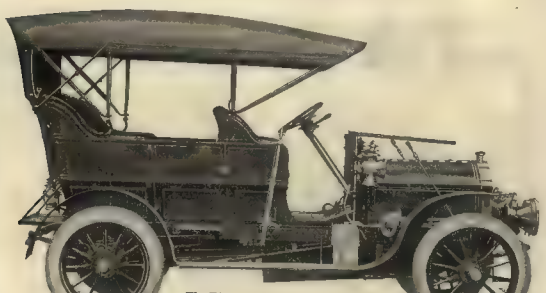
Number of cylinders...4.
Diameter and stroke...5 x 5¼.
Revolutions per minute.....1100 to 1500.
Ignition.....Jump spark. 5 individual Unit Autocoil.
Battery equipment.....1 set Storage. 1 set Dry.
Carbureter.....Special Automatic.
Control.....Automatic Throttle Governor.
Oiling.....Automatic to all Crank Shaft and Pin Bearings, Cylinders and Pistons.
Gasoline capacity.....20 gallons.
Radiator.....Whitlock type.
Transmission.....Sliding gear, direct on high speed. Bevel Gear Drive.
Speeds.....3 Forward and Reverse.
Bearings.....Ball bearings all over except Motor. Hess-Bright Bearings in Transmission.
Frame.....Pressed Special Carbon Steel, Channel Section, 4½" to 2¾" deep.
Wheel Base.....109 inches.
Wheel tread.....56 inches.
Wheels.....Wood Artillery, 36 inch
Regular tires.....Goodrich 4½" front, 5" rear. Goodrich-Bailey Non-Skid on rear.
Body type.....Side entrance tonneau.
Regular color.....Dark Brewster Green body and running gear. Light green striping.
Material.....Cast Aluminum.
Brakes.....Foot brakes on inside of drums on hubs, both rear wheels. Hand brakes on outside of drums on hubs, both rear wheels.
Equipment.....2 Side oil lamps, 1 Tail oil lamp, 2 Head gas lamps and generator, Horn and full set of tools, Gasoline tank gauge, Veeder odometer, 4 Shock Absorbers, Extra tire carrier, Trunk rack.
*Weight (approximate)*3100 pounds.

Price of the Great Arrow Victoria, without top, $5,000. Semi-enclosed top, $350 extra. Cape top, $200 extra. Folding glass front, $50 extra. F. O. B. Buffalo.

LIST OF DEALERS EAST OF PITTSBURG

BOSTON—J. W. Maguire Co., 585 Boylston St.
NEW YORK—Reynolds Motor Car Co., Broadway, 58-59th Sts.
BALTIMORE—Scullers Auto Co., 2021 Maryland Ave.
BUFFALO—The George N. Pierce Co., 370 Main & Ss. Retail)
HARTFORD, CONN.—The Motor Garage Co., 120 Allyn St.
OTTAWA and MONTREAL—Wilson & Co., 142 Sate St.
PHILADELPHIA—Pope-Hughes Motor Car Co., 301 N. Broad St.
PORTLAND, ME.—J. A. Bowling
PROVIDENCE—The Shepard Co.
ROCHESTER—U. S. Automobile Co., 81 Plymouth Ave.
SARATOGA SPRINGS—W. L. Hodson, 15 Woodlawn Ave.
SCRANTON, PA.—Standard Motor Car Co.
SPRINGFIELD, MASS.—E. K. Clark Auto Co., 111 Lyman St.
SYRACUSE—Pierce Arrow Auto Co., 109 S. State St.
TORONTO—Auto & Supply Co., Ltd., 34 Temperance St.
TROY, N. Y.—Troy Auto Exchange, 32 Fourth St.
UTICA, N. Y.—Utica Motor Car Company

For Agents West of Pittsburg, see other page.



The Pierce Great Arrow, 28-32 H.P., with straight tonneau body, cape top and folding glass front.

PIERCE

Specifications for the 28-32 H. P. Car

Number of cylinders	4.
Diameter and stroke	4¼ x 4¼.
Revolutions per minute	1200 to 1600.
Ignition	Jump spark. 5 individual Unit Autocoil.
Battery equipment	1 set Storage. 1 set dry.
Carbureter	Special Automatic.
Control	Automatic Throttle Governor.
Oiling	Automatic to all Crank Shaft and Pin Bearings, Cylinders and Pistons.
Gasoline capacity	18 gallons.
Radiator	Whitlock type.
Transmission	Sliding gear, direct on high speed. Bevel Gear Drive.
Speeds	3 Forward and Reverse.
Bearings	Ball bearings all over except Motor. Hess-Bright Bearings in Transmission.
Frame	Pressed Special Carbon Steel, Channel section 4½" to 2¾" deep.
Wheel base	107 inches.
Wheel tread	56 inches.
Wheels	Wood Artillery, 34 inch.
Regular tires	Goodrich 4" front. 4½" rear. Goodrich-Bailey Non-Skid in rear.
Body type	Side entrance tonneau.
Regular color	Dark Blue body and running gear. Light blue striping.
Material	Cast Aluminum.
Brakes	Foot brakes on inside of drums on hubs, both rear wheels. Hand Brakes on outside of drums on hubs, both rear wheels.
Equipment	2 Side oil lamps, 1 Tail oil lamp, 2 head gas lamps and generator, Horn and full set of tools, Gasoline tank Gauge, Veeder Odometer, 4 Shock Absorbers, Extra tire carrier, Trunk rack.
Weight (approximate)	2700 pounds.

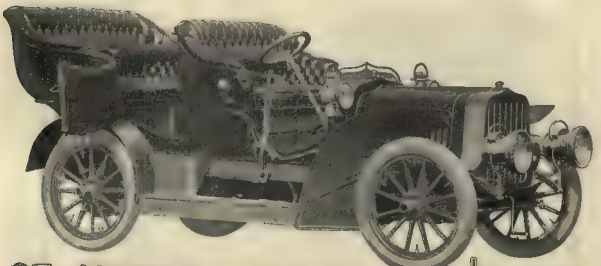
Price of the Great Arrow 28-32 H. P., without top, $4,000. Semi-enclosed top, $350 extra. Cape top $200 extra. Folding Glass Front, $50 extra. F. O. B. Buffalo.

LIST OF DEALERS WEST OF PITTSBURG

CHICAGO—H. Paulman & Co., 1321 Michigan Ave
PITTSBURG—Banker Bros. Co., Baum and Beatty Sts.
DETROIT—J. F. Schneider, 189 Jefferson Ave.
DENVER—The George N. Pierce Co., 1618 California St.
HOUSTON, TEX.—Hawkins Auto & Gas Engine Company
KANSAS CITY, MO.—E. P. Moriarty & Co., 1212 Grand St
LOS ANGELES—Rush & Burge, Cor. 7th and Main Sts
LOUISVILLE, The Zorn-Strauss Co., Inc.
MILWAUKEE—Hibbard Automobile Company.
OAKLAND, CAL.—The George N. Pierce Co., 1013 Clay St. (Wholesale).
SAN FRANCISCO—Mobile Carriage Co., Golden Gate Ave. & Gough St.
ST. LOUIS—Western Co., 4781 Washington Boulevard.
ST. PAUL—C. P. Jay Auto. Co., 366 Minnesota St.

For Agents East of Pittsburg, see other page.

ONLY 54 LBS. OF WEIGHT PER HORSE POWER



35-40 H.P. Price Fully Equipped $3,500

POPE

This car is absolutely the most powerful, fastest touring car ever built. It will run from 5 to 60 miles an hour on the high gear. It will carry seven people at 30 miles an hour, and its noiseless, smooth running engine will be scarcely more exerted than when idling. Note this significant fact—The car has only 54 lbs. of total weight per horse power, only 10 8-10 lbs. of engine weight per horse power.

The Wheel Base is only 104 inches

yet the car seats comfortably seven people with room to spare. DOUBLE DIRECT OUTSIDE CHAIN DRIVE of course; and a transmission made of a specially treated steel of 225,000 lbs. tensile strength—the strongest, most efficient, "sweetest" running transmission ever constructed. Send for Catalogue.

Be sure the name POPE is on your Automobile

POPE MOTOR CAR CO.
TOLEDO, OHIO
A. L. A. M.

AUTOMOBILES

POPE
Waverley ELECTRIC
AUTOMOBILES

PROFIT TO THE DEALER

The sales of **POPE-WAVERLEY ELECTRICS** last year increased 60 per cent. over the year before; and the past three months have increased 60 per cent. again over that. We are not the only ones who have increased sales, and we are glad, because it shows that the **Electric** is being appreciated by the public and by **some agents.** Are you among those agents who sell gasoline cars only? If so you are neglecting the most profitable part of your business. Many of our agents have told us that, had it not been for the **Electric** part of their business this year, they would have lost money. **The Electric is an all-the-year-round-carriage.**

Its sales are almost as great in the fall and winter as in the spring and summer. Are you neglecting a chance to make money at this season of the year? What you can make now is all velvet.

We exhibit in New York at Madison Square Garden only

WAVERLEY DEPARTMENT **Pope Motor Car Company**

INDIANAPOLIS, IND.

NEW YORK CITY - - - 1733 Broadway
WASHINGTON, D. C. - - - 819 14th St.
BOSTON, MASS. - - 228 Columbus Ave.
SAN FRANCISCO, CAL. - 451 Mission St.

THE MARMON

"A Mechanical Masterpiece"

Front wheel and opposite rear wheel each raised over a foot

A Show that Lasts All Year

We shall demonstrate at the Armory Show, New York, and at other shows.

But, for the man who doesn't go, we offer here an Automobile Show that needs very little explanation, even to a novice.

The Marmon is **naturally** flexible. You can see that.

It moves over rough roads with an easy, gentle sway—a very luxury of motion—unknown in any other car. You can see why. Its running gear adjusts itself instantly and **Without strain** to any position which the road demands.

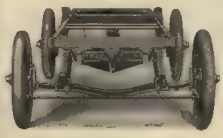
Other cars have but one frame. Some have an attachment called a sub-frame, but it is all rigid. The only flexibility attained in other cars is an uncertain variety provided by the springs and tires, and these do not eliminate jolts or sufficiently protect the costly mechanism from binding, twisting strains and ruinous friction. Anyone knows that the best of tires can not and do not endure the excessive and unnatural burden thrust upon them by the cumbersome, unyielding construction.

Observe that, in the Marmon, raising one wheel does not affect the other three wheels in the slightest. The two frames operate independently of each other, due to a **patented** exclusive Marmon feature.

Double Three-Point Suspension

Each frame is suspended on three **pivotal** points. The sole duty of the upper frame is to carry the luxurious solid cast aluminum body.

The lower frame carries the entire power plant. Motor, transmission, driving shaft and live rear axle are a unit in operation—always in perfect alignment, free from twisting and binding strains, no matter how the two frames are raised, lowered or tilted. The Marmon driving shaft is therefore straight and rigid—without flexible couplings or power wasters of any sort. This means power transmission as perfect as can be had in a stationary power plant

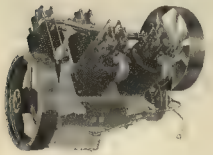


Normal Position.

Front Wheel Raised Over a Foot. Body Level

THE MARMON

"A Mechanical Masterpiece"



Half Rear View

Half Front View

The One Unfailing Oiling System
The One Perfect Air-Cooled Motor

The Marmon lubrication system is superior to splash, gravity or any other known oiling plan. Starting and stopping with the starting and stopping of the motor, a **constant** and **uniform** flow of oil is forced through the hollow crank shaft (solid forging, drilled) **directly into** all the main engine bearings, crank and piston pin bearings. Has no adjustments, no uncertainties; needs almost no attention. Has no equal for economy. One gallon of lubricating oil runs the Marmon from 800 to 1000 miles.

Four cylinder motor, perfectly air-cooled. Never sticks or overheats; very powerful, quiet and smooth running. Improved spark and throttle control on steering wheel.

In general excellence of construction, we believe we are justified in saying that the Marmon is in a class by itself.

It is made by a company that has for **over fifty years** maintained a high reputation for the excellence of its mechanical products.

We build the car complete, all of it excepting the tires, wheels, springs, ignition, etc. We make our castings; iron, aluminum, brass and bronze; do all machine work, all sheet metal work including frames; build our bodies, trim and finish them; all of which results in consistent construction and of a grade excelled by no other manufacturer and equaled by few.

The result is that we build, not many cars, but excellent cars, every one of them "A Mechanical Masterpiece."

To anyone who really seeks the best, the exclusive mechanical beauty, superb workmanship, and stylish appearance of the Marmon need little more than an introduction.

Our Booklet No. 5 contains a complete description. Yours for the asking.

FOUR CYLINDERS AIR-COOLED { Model C, Four Passengers, $2,500
Model D, Five Passengers, $3,000

Nordyke & Marmon Co.

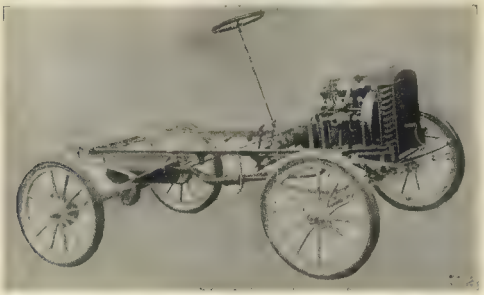
(ESTABLISHED 1851)

Indianapolis, Indiana

Member American Motor Car Manufacturers' Association.

Speeds of 4 to 25 miles per hour are attainable. The drive is by bevel gears and shaft with two universal joints in the shaft. The engine and transmission bearings are automatically oiled through a compression force feed oiler located on top of the crank case and having four sight feeds.

The frame is of angle steel 1¾x1¾x3-16 in. Thirty-four by four-inch tires are used both front and rear. The car weighs 2000 pounds and lists at $2800. The well-known Reeves air-cooled engine is used. It comprises four vertical cylinders and develops 24 H. P. Ignition is by jump spark, a storage battery furnishing the igniting current. Transmission is of the sliding gear type, giving three forward



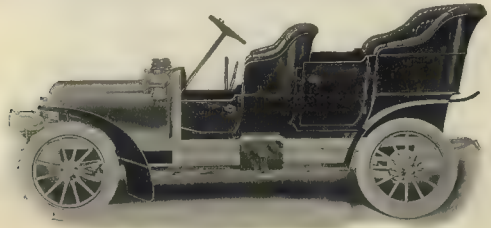
Walker Chassis

The 28-inch artillery wheels are fitted with 3-inch clincher or detachable tires. The wheel base is 78 inches. Tread is standard. Ignition is by jump spark, coil being fastened on the dash in front of the operator. The fuel tank holds 8 gallons, water system 2½ gallons. Cooling water is circulated by means of a gear pump.

The "Aerocar"

The recently formed Aerocar Co., of Detroit, Mich., will commence deliveries of their first car, Model A, in February. This is a side entrance tonneau finished in Royal blue and having seating capacity for five persons. The wheel base is 104 inches; tread 54 in. speeds and the reverse. Drive is by shaft and bevel gears. The frame is of pressed steel. Brakes operate on both rear hubs and on the transmission. A worm and nut steering device is used. The car is fitted with an extension top.

Arthur B. Ennis, in 15.00 4-5, won the 10 mile contest held on Coney Island cycle path, November 25. Benjamin Mallon crossed the tape first, in 14.28, but was disqualified on account of using a racer instead of his regular duty machine, as was required. Chas. M. Murphy finished third, in 15.31, but he also was disqualified, as he never rode a motor cycle on regular duty.



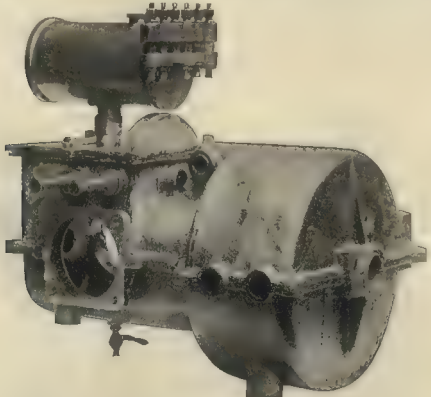
"Aerocar" Price $2800.00.

Walker Runabout

The Walker Motor Car Co., of 109 Fort St., East Detroit, Mich., have just brought out a new gasoline runabout which is of artistic design and has been built with the idea of practicability in view. This company has had many years' experience in the construction of gasoline motors and have aimed to make their engine one of few parts. This runabout is a quiet, easy running car, which has good speed possibilities. The engine comprises two opposed cylinders each 4x4 inches, which develop 10 H. P. at ordinary speed. It is located under the hood and all parts are accessible.

All valves are interchangeable and both sets are mechanically operated. The valve openings are 1½ inches in diameter. A planetary type of transmission is used which gives two forward speeds and the reverse. The crank case and transmission case are combined in one casting, making the whole engine oil proof.

Walker Runabout, 4 x 4 Gasoline Motor, 10 H. P.



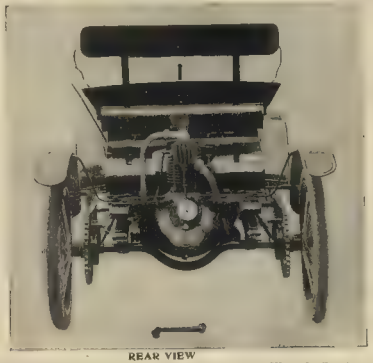
Walker Crank Case, Gear Case and Oiler.—This cut shows the assemblage with cylinders detached. When attached they extend at right angles to this assemblage.

1891 1906 Orient

FRICTION-DRIVE BUCKBOARD

Air Cooled Four H. P. 10-inch Clearance. Speed 36 miles an hour Climbs 40 per cent. Grade. Weight 600 lbs.

Starts Easily. Numberless Speeds. Forward and Reverse. Fan on Engine. Oils from Seat. Elliptic Springs. Semi-rigid Frame



REAR VIEW

A REMARKABLE MOTOR CAR FOR $400.00

As noiseless and Free from Vibration as a 4-cylinder Touring Car. Will climb grades and drive through sand and mud that no other motor car of any horsepower can negotiate. Its maximum driving ratio is 40 to 1—a high-powered touring car is but 18 to 1.

Gasoline Consumption 35 miles to one Gallon.

Oil Consumption 90 miles to one pint.

Operating Cost 1-3 of a cent per mile.

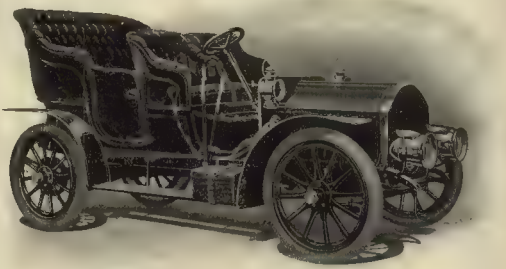
Responsible dealers desired in unassigned territory Write for Catalog and Agency Proposition

WALTHAM MANUFACTURING COMPANY

GENERAL OFFICES AND FACTORY **WALTHAM, MASS., U. S. A.**

Members Association Licensed Automobile Manufacturers

Waltham Orient



WALTHAM-ORIENT, MODEL R, $2250

The Car of To-day Must do More than Look its Price. The high priced, high powered motor car is all right—it has its place and its purchasers but the POPULAR DEMAND is for a car of moderate price, reasonable speed that will be maintained up-hill as well as on the level road; that will arrive on time and return when expected; that will keep on the road and out of the repair shop; that can be operated economically and safely and does not require the employment of a professional chauffeur; that will remain in service winter as well as summer.

It must look well—ride well—run well—and keep well. That's where your pleasure comes in. You pay your good money for it and you have a right to expect it.

It is because it combines all these important and necessary features that

The WALTHAM-ORIENT is the leading American car of its price

FIVE MODELS FOR 1906

MODEL R, a Swell Special, 20 H. P., - - - - - - $2250
MODEL N, 20 H. P. Tourist - $2000
MODEL L, 16 H. P. Tourist - $

MODEL M, 16 H. P., Runabout, Detachable Tonneau - $1750
MODEL K, 16 H. P. Two passenger Runabout - - - $1600

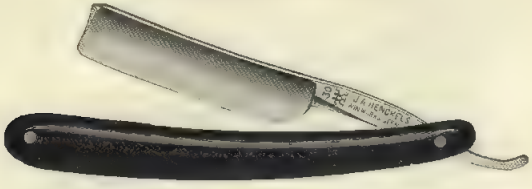
We are alive for live agents. Write for specifications and proposition. We will exhibit at New York, Chicago and Boston Shows.

WALTHAM MANUFACTURING COMPANY

General Offices and Factory, Waltham, Mass., U.S.A.

Members of Association Licensed Automobile Manufacturers.

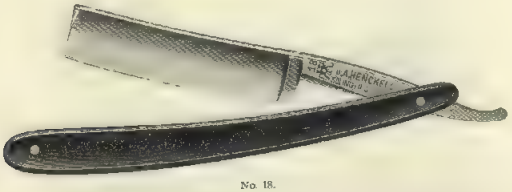
HENCKELS RAZORS.



No. 30.

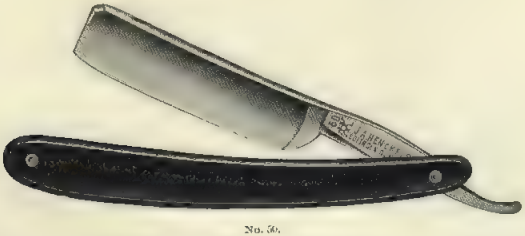
Oval Rubber Handles.

No. **30.**	**4-8** Inch, Square Point, Three-Quarter Concave	Per Dozen	$26 00
No. **30.**	**5-8** Inch, Square Point, Three-Quarter Concave	"	26 00
No. **30.**	**6-8** Inch, Square Point, Three-Quarter Concave	"	26 00
No. **102.**	**5-8** Inch, Square Point, Hollow Ground	"	18 00



No. 18.

No. **18.** **5-8** Inch, Square Point, Half Concave, Flat Rubber Handle.... Per Dozen $30 00



No. 50.

No. **50.**	**4-8** Inch, Square Point, Full Concave, Flat Rubber Handle	Per Dozen	$36 00
No. **50.**	**5-8** Inch, Square Point, Full Concave, Flat Rubber Handle	"	36 00
No. **50.**	**6-8** Inch, Square Point, Full Concave, Flat Rubber Handle	"	36 00

Half Dozen in a Box

HENCKELS RAZORS.

No. 68.

No. **68.** 4-8 Inch, Square Point, Full Concave, Oval Grained Celluloid Handle..... Per Dozen $38 00

No. **68.** 5-8 Inch, Square Point, Full Concave, Oval Grained Celluloid Handle..... Per Dozen 38 00

No. **68.** 6-8 Inch, Square Point, Full Concave, Oval Grained Celluloid Handle Per Dozen 38 00

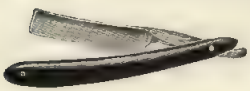
No. 81

No. **81.** 4-8 Inch, Round Point, Full Concave, Carved Rubber Handle ..Per Dozen $40 00

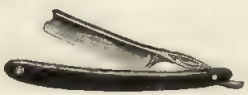
No. **81.** 5-8 Inch, Round Point, Full Concave, Carved Rubber Handle... " 40 00

No. **81.** 6-8 Inch, Round Point, Full Concave, Carved Rubber Handle... " 40 00

WOSTENHOLM RAZORS.



No. 02363.



No. 03548.

No. **02363.** 5-8 Inch, Square Point, Hollow Ground, Oval Rubber Handle, Per Dozen $18 00

No. **03548.** 5-8 Inch, Square Point, Hollow Ground, Flat Rubber Handle. " 15 00

Half Dozen in a Box.

the center, cam shafts are on the inside of crank case, and are driven by combination bronze and fibre gears. Cams are case hardened and secured to shaft by Woodruff Keys and set screws, valve guides are of bronze. Cylinders are finished by grinding. Piston is of generous length and carries four packing rings. The piston pin is 2 inches in diameter of nickle steel hardened. The piston pin is hollow and is secured in place by set screws which register with holes in pin. The connecting rods are cast of Whitley Steel, piston pin end is solid, bushed with hard bronze. The crank pin bearing is adjustable The rod bronze bushed. The cap is of solid bronze.

Transmission gives three speeds forward and one reverse and is of the usual sliding gear type; gears are 1⅝ inch face, 6 pitch of nickel crome steel, carefully hardened and ground to gauge after being hardened. The bearings throughout the transmission are roller, with the exception of the end thrust bearings which are ball and are of sector type with all wearing surfaces hardened.

The cooling is accomplished with a Briscoe coil pipe radiator, positively geared circulating pump, and by belt driven fan, and additional radiator being hung below the hood. The cooling is very efficient. The carburetor used is the Buffalo. This carburetor is of the usual float feed type, but the gas and air throttle are linked together by a peculiar mechanical motion which is said to vary the position of the air throttle in exact proportion to the needs of the engine.

The ignition is by jump spark. A Remy Type H. magneto supplies the current. This is mounted on an extention cast integral with the crank case.

The lubrication is by Hill Precision oiler, feeding oil direct to cylinders and crank case. The oiler is positively geared and is very economical in operation.

The car is fitted with three brakes, a service brake on drive shaft, and two powerful outside clamp hand brakes on the rear wheels.

The Iroquois Bus in Utah and the stage which it has supplanted.

large diameter. The sliding train slides on squared and hardened shaft. The clutch is of the usual cone leather faced type, but the Company are now experimenting with a multiple disc clutch running in oil, which they think will be much superior, especially for mountain work

The counter or drive shaft is 1⅞ inches in diameter, carried on four roller bearings, two in the transmission, and two on main frame, held in place by bronze castings. Radius rods 1¾ inches in diameter run from these bronze castings to the rear axle. These are tightened in the usual manner with right and left turn buckle. The final drive is by double chain. Whitney chains 1½ inch pitch by ¾ inch wide being used.

The front axle is of steel 2¼ inches square steering yokes forged integral, steering axles taper from 2¼ inches to 1½ inches, front wheels roll on Timken roller bearings. Rear axle is of the same size with the same type of bearings.

Steering gear is of the usual worm and These are 15 inches in diameter and 2 inches wide, and will hold the car anywhere.

The spark and throttle levers are mounted on sector, immediately below steering wheel. All gear shifts are on one lever. An interlocking device prevents gear changes unless the clutch is disengaged. Emergency brakes are set by lever and secured by ratchet. The left hand foot pedal operates clutch. The right hand pedal applies service brake on the drive shaft.

This car when geared for passenger work has a speed of 18 miles per hour on direct drive, and will seat 15 people comfortably. The cushions are very deep and have the springs placed very close together and the car rides very comfortably, almost as easy in fact as when pneumatic tires are used. The Iroquois Works have made no fixed price on this wagon, as this of course will depend on the equipment, style of body, and the use for which it is intended, but invite correspondence from parties interested in this type of vehicle.

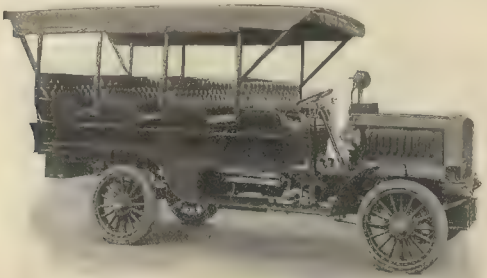
Iroquois Motor Stages.

W. J. GRUBB.

The Iroquois Iron Works, 178 Walden Ave., Buffalo, N. Y., have completed a 60 H. P. stage, which they have put through the hardest and most exacting of road tests. The company have endeavored to design a wagon that would meet the transportation problem from one town to another in districts where electric railroads are impractical and for hotels and resort places for sight-seeing parties, etc. The one aim being to build the machine good enough to travel over any kind of roads and with power enough to go anywhere that four horses would pull a wagon. Their first car was shipped to Utah, where it was tested out and taken over roads that were almost impassable for horses and wagon. This car was run over the Price trail between Vernal and Ft. Du Chesne, Utah, a distance of 28 miles, through the canons, over the mountains and across the desert. The car was in charge of Mr. W. G. King, Gen'l Mgr. of the Iroquois Iron Works, and a party of six others. They carried an extra 50 gallon tank of gasoline, and had a surveyor's level and barometer along, and all grades were accurately computed. This trail is about 6000 feet above sea level. In many places grades exceed 22 per cent. and for five miles in one stretch sand 9 inches deep was encountered, and in other places ruts were so deep that the front axle dragged the ground. On arrival at Ft. Du Chesne, the Quartermaster Sergeant could not believe that the car had come safely over the Price trail as he said he never brought an army wagon over without something being broken. The only thing that went wrong on the car after being subjected to as hard a test as any ever given a motor car, was that the right hand front mud guard was broken. This test demonstrated the fact that a properly constructed four wheel wagon could be made strong enough to give satisfactory service under the worst conditions. This wagon is now in operation daily between Dragon and Bonaza, Utah, a distance of 24 miles and makes the trip in two hours. It formerly required four hours to make the trip with a four horse stage which the motor bus has now supplanted.

The performance of this first car has been very satisfactory, and the Iroquois Iron Works are making active preparations to build a number of these chassis along the same lines, but will finish body, and gear the machine either for passenger service or for truck use for heavy hauling, as purchaser may desire.

This wagon has a wheel base of 11 feet, a tread of 64 inches, 36 inch wheels with 5 inch solid tires in rear and 4½ inch front.



Iroquois 60 H. P. 15-passenger Motor Bus.

The Turner tire made by Hartford Rubber Works being used.

The frame is of steel channel section 5 inches deep by 1⅜ x 3-16 thick, and is endless, cross frame members of the same section and are securely braced by gussett plates. Springs both front and rear are semi-elliptic, 45 inches long, 2¼ inches wide and have 13 leaves.

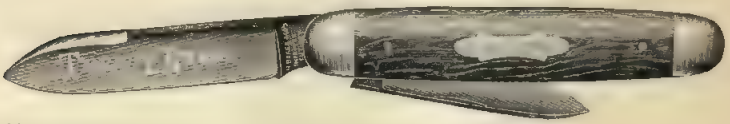
MOTOR.

The motor is a 60 H. P. four cylinder vertical water cooled. Cylinders are cast separate, with head, valve chambers and water jacket integral. The cylinders have a bore and stroke of 6 inches respectively. Valves are mechanically operated 2⅝ diameter, and are interchangeable. The crank shaft is of Carpenter steel 2 inches diameter, and is carried in five bearings which are held with the upper half of the crank case. The main bearings are 6 inches long, central bearings are 2¼ inches long. The disc for fastening flywheel is forged integral with the crank shaft. The flywheel being secured by tool steel dowells and bolts.

The crank case is of aluminum divided in

POCKET KNIVES.

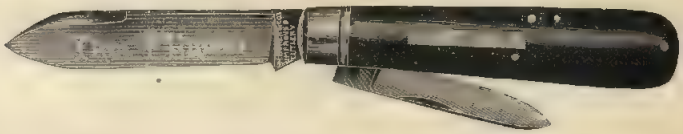
AMERICAN "TREE" BRAND JACK-KNIVES.



No. 9124. Steel lining, steel bolsters, cocobolo handle, 2 blades . . .. Per doz. $

No. 9127. Steel lining, ebony handle, 2 blades . . . Per doz. $ . .

No. 9586. Brass lining, German silver trimmings, 2 blades . . . . . Per doz. $.....



No. 9691. Brass lining, German silver trimmings, 2 blades.. .. .. .

POCKET KNIVES.

WOSTENHOLM "I X L" POCKET KNIVES.

No. 12292. Brass lined, stag handle, 4 blades.. .. .. Per doz $
No. 12290. Brass lined, pearl handle, 4 blades.. .. ..

No. 14051. Brass lined, stag handle, polished blades.. .. ..Per doz. $
No. 14048. Brass lined, pearl handle, polished blades .. ..Per doz. $

No. 14263. Brass lined, stag handle, polished blades .. ..Per doz. $

No. 14429. Stag handle, 4 blades, polished .. ..Per doz. $..

No. 15326. Bone handle, 2 blades, polished .. .. Per doz $

No. 17020. Iron bolster, P. stag handle, 3 blades,. .. ..Per doz. $

No. 17035. Brass lined, 4 blades, P. stag handle .. ..Per doz. $

Wayne

An Introduction to the Wayne Cars of 1906

The appreciation accorded our cars last year warrants us in greatly increasing our capacity and in placing before the automobile trade improved types of Wayne cars. The four models we now present are the result of mature experience. They are not new and untried experiments. Each car is a distinct type of Wayne design and construction and each model has been built with a view to supplying the varied demand for high grade machines. In the Wayne cars of 1906 the automobilist will be sure to find a car suited to his needs.

Wayne Model F
$3500

MOTOR, 4 cylinder vertical, cylinders 5½ x 5 cast in pairs. Cylinders and pistons ground. Engine develops by brake test 30 h. p. Water cooled. IGNITION, jump spark with quad coil and storage battery. TRANSMISSION, sliding gear with three speeds forward and reverse. Hess Bright ball bearings throughout. REAR AXLE, shaft drive floating type. FRONT AXLE, I beam drop forged, one piece, nickel steel. WHEEL BASE, 114 in. TIRES, 34 x 4½. EQUIPMENT, includes all necessary tools of the best quality, 2 side lamps, 2 acetylene head lights with generator, tail lamp and tube horn.

Wayne Model K
$2500

MOTOR, 4 cylinder vertical, cylinders 4¾ x 5 cast in pairs and water cooled. Engine develops by brake test 35 h. p. Cylinders and pistons ground. IGNITION, same as Model F. TRANSMISSION and Axles same type as Model F. TIRES, 32 x 4. EQUIPMENT, same as Model F.

Wayne

Two Passenger Runabout.

MOTOR, 2 cylinder opposed under hood. Cylinders 4½x4 developing 14 h. p., water cooled. TRANSMISSION, planetary gears with DIRECT BEVEL GEAR DRIVE. WHEELS 28x3. Control the same as Model C.

Wayne Model H
$800

The strong features of this car are the extreme simplicity and accessibility of the engine and transmission. The crank case and transmission case form one casting and the entire engine can be taken apart or assembled in half an hour.

Wayne Model C
$1250

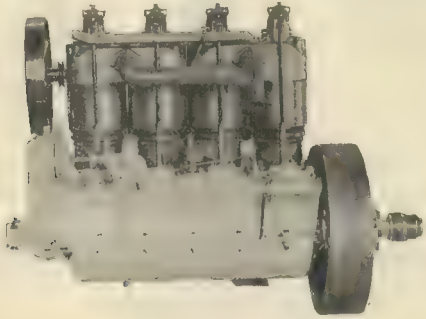
MOTOR, double opposed of the standard Wayne type, with cylinders 5¼x5. Engine is hung under the chassis frame and develops by break test 20 h. p. *This is the same type of car which proved so successful last season, brought up to-date and with all improvements.* TRANSMISSION, is of the planetary gear type with chain drive. CONTROL is by a single lever which engages the high speed clutch and reverse. The slow speed and brake are controlled by foot pedals. TIRES 30 x 3½. EQUIPMENT, complete set of tools, side oil lamps, tail lamp and horn. We want agents to write us about the Wayne cars for 1906. Agency arrangements can now be made for unoccupied territory. Write while you think about it, for full particulars.

Wayne Automobile Co., Detroit, Mich.

system. The feed is positively automatic, requiring absolutely no attention after having been adjusted. Sight feeds located on the dash are of simple design encased in a polished brass housing and plainly show the quantity of oil that is being forced through each feed tube leading to all parts requiring lubrication.

The muffler is so constructed as to perfectly silence the exhaust with a minimum amount of back pressure.

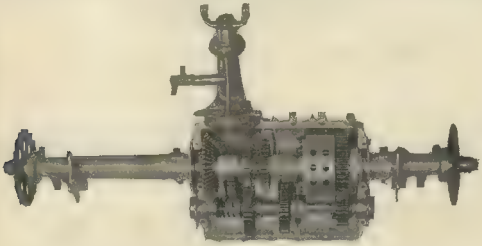
In this "Pope-Toledo" engine, in addition to the other special features, the very remarkable accomplishment has been attained of securing one horse power for every 10.8 pounds of engine weight without sacrificing in any particular the necessary strength and durability; also the engine gives 1 horse power for every 54 lbs. of complete car weight.



Engine of the Pope-Toledo Type XII.

TRANSMISSION.

The accompanying illustration of the transmission shows the general arrangement of the gears and the gear box or transmission case, which is aluminum alloy in two parts, divided horizontally. The transmission is of the sliding gear type, providing three speeds forward and the reverse, and giving direct drive on the high gear. It is suspended upon transverse cross members of the frame. In addition to this support, the jack shaft brackets are hung between and rigidly bolted to the vertical flanges of the side members of the frame. This arrangement forms one complete and secure unit of frame and transmission, preventing any loss of power between engine and sprockets, due to wringing and twisting of the frame.



Transmission of the Pope-Toledo Type XII.

The brass bushing supporting the differential gears has been greatly lengthened and

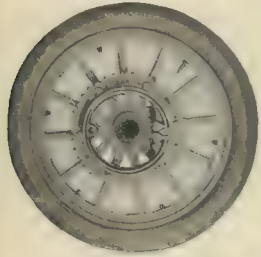
stiffened, maintaining the joined ends of the two jack shaft members rigidly true to one another. The bearing system has been greatly improved, rendering the adjustment of the bevels perfectly secure. The bearings on the countershaft are made plain and of bronze for the purpose of precise alignment, and to maintain their alignment under severe strains and the wear of daily use. Under heavy strain, the gears of the transmission are liable to be removed from their proper mesh by separation, should the transmission casing not be sufficiently strong. The bottom of the "Pope-Toledo" transmission case is strongly built throughout and is heavily reinforced by webs outside and inside. The casing is, therefore, absolutely rigid, and keeps the gears in proper mesh, regardless of any strain that may be brought to bear upon it.

On the upper half of the transmission case, to prevent the gears shifting from their proper mesh, a rod operates a rocker arm and withdraws a plunger from holes situated in the moving gear shipper rod. This is a sort of breech locking mechanism, making it impossible to shift the gears until the clutch is fully withdrawn. When the gears are shifted and the clutch released, a spring throws this locking mechanism back into position centreing the gears into perfect mesh.

All the gears, shafts and other vital parts of the transmission are made from specially treated steel testing 225,000 pounds tensile strength to the square inch. This steel necessitated excessively expensive experiments extending over a long period of time, but the results obtained more than justified the effort and outlay. Gasoline is fed to the carburetor by gravity.

Type XII. can be furnished with landaulette, limousine or special bodies. The limousine shown herewith lists at $5000 fully equipped. It has roomy double side entrances and is upholstered and finished to specifications. Accessories include speaking tube to chauffeur, silk curtains, arm rests and toilet cases. A radiator is placed in floor for heating purposes. All windows in the body drop down, and are fitted with anti-rattling devices. The car is lighted with an 8-candle power electric lamp. A lift third seat is fitted in the tonneau, facing the rear, to accommodate two grown persons.

1906 Pope-Toledo Type XII with Limousine Body. Price, $5000.



Wheel of Pope-Toledo Type XII, showing brake and sprocket.

L. J. Mueller, Cleveland, Ohio, will have a number of motor cycles and tricars at Palm Beach, Florida, for the purpose of conducting a motorcycle livery during the winter.

Olds Motor Works, Lansing, Mich., has been awarded a gold medal for its exhibit at the Lewis and Clark exposition, Portland, Oregon, last summer.

1906 Pope-Toledo Type XII

The 1906 Pope-Toledo, made at the Toledo, Ohio, factory of the Pope Motor Car Co., is cataloged as Type XII and is fully up to the usual high standard of Pope products, comprising a large number of good features and being made of the best materials by the best manufacturing methods. The general lines of the Pope-Toledo car have been slightly altered to obtain exceptional elegance and refinement.

The tonneau is very roomy, the rear seat accommodating three persons comfortably, and there is a lift seat between the rear and front seat on which two may be seated, providing for the carrying of five in the tonneau without any inconvenience whatever. This lift, or third seat, is provided with a simple arrangement whereby it may be easily lowered so as to rest directly back of and below the front seat, entirely out of the way.

guard. There is also a patent leather protection strip between frame of the body and running board step on each side of car, affording ample protection from dust, mud, etc.

The frame is of very few parts and is straight sided. It is made throughout of the finest grade of steel obtainable for this purpose, and is tested to a safe load away above what is actually required. The emergency brake, operated by outside hand lever, as well as the foot brake, are of the internal expanding type, engaging a drum on each rear wheel. In applying either of these brakes, the engine clutch is automatically disengaged. The axles are of the I-beam construction and are made from steel testing 110,000 pounds tensile strength to the square inch. The wheels are assembled and spoked by hand in their own factory. Ball bearings

1906 Pope-Toledo Type XII. 35-40 horse power. Price, fully equipped, $3500.

The double side entrance is wider than on former models, affording ample room for entering and leaving the car. On the inside of each door is located a leather flap pocket of very good proportions, and there is also a triangular flap pocket on the right and left hand side of the tonneau directly next to the pockets on the doors. The upholstering of the front seat and the tonneau is of soft, rich leather, very deep, and so designed as to be very comfortable and easy riding.

The steering wheel proper consists of an aluminum spider and rim on which is mounted above and below half rims of Circassian walnut wood. The steering arrangement is of the irreversible worm and segment type. The control is graduated on the high gear from five miles per hour to limit of speed. Operation is by spark and throttle levers situated on the steering wheel. These are of new design and very easily operated.

The rear mud guards are made of aluminum, oval in shape, following the curve of the wheels; front guards are new style, very wide and fitted with patent leather protection strips extending between engine hood and

of very large dimensions are used. Double chain drive is employed. This car has one horse power for every 54 pounds of weight. This achievement not only provides for less wear on tires, but less wear on all other working parts.

ENGINE.

The engine is of the 4-cycle type and twin heads are used. All gears are encased in an aluminum cover so arranged that a magneto may be attached, if desired. The water circulating pump is of the centrifugal type, positively driven by gear from the cam shaft. The carburetor is purely "Pope-Toledo" type of improved design, fed by gravity. The average consumption of gasoline under ordinary touring conditions is one gallon for every 17 to 18 miles.

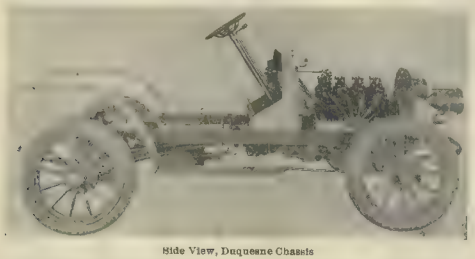
The Hill Precision Mechanical oiler used on "Pope-Toledo" cars is designed especially for their use. It is located on the engine arm close to the exhaust pipe, thus providing for a proper temperature of the oil under all climatic conditions. But one pump is used for the entire set of 6 feeds, no check valve being used in any portion of the lubricating

top of steering wheel, but independent of the latter. The gear operating lever is arranged immediately below the wheel. A backward movement of this lever gives the slow speed forward, a forward motion the high speed. The reverse and brakes are operated by foot pedals.

Every part of the Duquesne car is made interchangeable, and great care has been taken with regard to little things—castellated nuts, spring cotters, taper pins used generously throughout.

ON THE ROAD.

On Monday, December 4th, the writer had the opportunity of taking quite a long ride in the Duquesne. The roads were covered with about four inches of snow, and the roads in Chatauqua county and around Jamestown are exceedingly hilly and in places very rough. On one very long and exceedingly stiff hill it was necessary to change gears and run for quite a distance on low gear, but the motor showed no signs of overheating, and pulled the hill at a satisfactory speed.



Side View, Duquesne Chassis

DUQUESNE RATCHET BRAKE

In addition to the expanding brakes the Duquesne car is fitted with a ratchet brake to prevent car from running backwards should the motor be stopped for any reason. The ratchet is cast integral with brake drum. A forged I steel pawl is brought into engagement with this ratchet by foot pedal and sprung and when ratchet is set it is is impossible for car to run backwards.

The Knox Motor Truck Co., Springfield, Mass., have sold two of their powerful three-ton Atlas trucks to the Springfield Provision Co., one to Meekins, Packard & Wheat, and one to E. B. Eddy Co., Hull, Canada. One of their 1906 models, a three-ton Atlas truck, was recently delivered to the Springfield Gas Light Co., and is claimed to be the first gasoline truck placed in that city. These orders were secured after the most rigid tests of the efficiency of Atlas trucks. The Knox Motor Truck Co. will be ready March 1 to make deliveries of their new Model C, 3000 lb. delivery wagon, which will be equipped with a Libby two-cycle, vertical, two-cylinder 25 H. P. motor developed on the Pacific coast and thoroughly tested during the past two years.

Croesus Motor Car Company, Kansas City, Mo., will offer two models of pleasure automobiles for the 1906 season. Model A has a 4-cylinder, 30-40 H. P. engine, 104 in. wheel base, 34x4½ in. Continental tires, and two sets of ignition, comprising a Lacoste magneto coil and storage battery. It is shaft driven with a sliding gear transmission, and silver plated trimmings throughout. Model

The motor ran exceedingly smooth and without perceptible vibration and pulled the car loaded with five passengers up some of the steepest hills the writer has ever seen a motor car climb. The car was stopped on the steepest of these and held from running backwards, to show the efficiency of the ratchet brake. The motor was then started by foot pedal without dismounting, and the car continued the ascent.

B is a 4-cylinder, shaft driven runabout with sliding gear transmission; an 82-inch wheel base, 30x3½ in. tires and a fine equipment.

The Average Man's Runabout

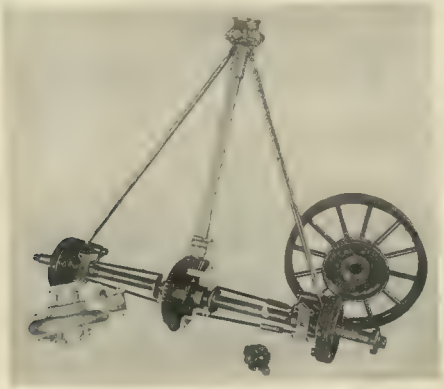
The "Average Man's" runabout, put out by The Adams Automobile Co., Hiawatha, Kas., for 1906 is equipped with a 10 H. P. double opposed, air cooled, 2-cycle motor, located under hood, and placed crosswise. Power is transmitted through knuckle joints and shaft to a friction transmission and then to the rear axle through a single roller chain. The body is of the latest runabout type. The wood wheels are fitted with 2½x28-in. tires. It has a 76-in. wheel base and 50-in. tread. Wheel steering is employed, and on top of the wheel is located the spark and throttle controlling levers. One foot pedal operates the emergency brakes, while another applies the friction wheel and also applies the brake most used under regular conditions when entirely released, but releases its grip on brake when pressure is again applied. When held at any point between those mentioned the machine is allowed to coast. Side lever gives different speeds ahead, and reverse. Price is $400.00.

transmission is supported in this case and turns on Hess-Bright ball bearings. This case makes a complete protection for working parts and prevents dust or dirt from reaching any part of the mechanism.

The transmission is of the planetary type, giving two forward speeds and one reverse, and contains only spur gears hardened and running in oil. Direct drive on high speed all gears idle.

Propeller shaft is encased in a tubular torsion lever, which is fixed solid with rear axle; front end of this tube carries universal jointed housing, which is practically dust and dirt proof, stationary part of which is bolted to gear case. Exactly in line with this joint in housing is the universal joint on propeller shaft. The drive gear is cut integral with shaft and electrically welded to propeller shaft, the front one being squared into universal joint, both universal joint and shaft being hardened.

Rear axle is of the floating type. Wheels, clutch driven, drive clutches being fitted to squared ends of rear axle, which is 1¼ in. diameter, high carbon shaft steel hardened on ends. This axle is also squared into differential, which is of the all spur gear type, and fitted with Brown & Sharpe bevel gear. The differential case is aluminum divided in centre, which allows the differential to be easily removed; also has a removable cap for oiling and inspection. The axle tube is fixed to differential case by flanges, which are electrically welded to axle tube and bolted to case with studs and nuts. The axle is double trussed; radius rods run from the ends of the axle to centre of car at the transmission gear case. The frame is of pressed steel, the engine base being bolted to aluminum transmission case, which also encloses flywheel. This gear case is attached to the frame midway at either side, the front of the engine being bolted to front cross frame member. This arrangement of supporting mechanism allows wheels to be raised a foot at any corner without straining bearings or causing bearings to bind, as was demonstrated in writer's presence. The frame is supported in the rear on full elliptic springs 38 in. long, 1¾ in. wide, 4 leaves, and is fitted with double auxiliary spring bumpers. The springs are very flexible and car rides very comfortable with two passengers, the auxiliary springs taking care of additional load when four or five passengers are carried. The front springs are semi-elliptic, 38 in. long, 1¾ in. wide, 4 leaves.



Floating Rear Axle, strut rods and wheel of Duquesne Car.

Front axle is forged solid 1⅝ in. diameter; steering knuckles of LeMoine type. Front wheels run on ⅝ in. ball bearings.

Steering gear is of the irreversible type, worm and sector made of steel and hardened. The steering gear is encased in a steel case that is rigidly fastened to main frame. The steering rods carry ball joints electrically welded to rods.

Ignition is supplied by jump spark and dry batteries, a Splitdorf coil being used.

Carburetor is of the usual float feed spray type, and is said to be quite efficient.

Lubrication is by Hill Precision oiler, positively driven, feeding oil direct to cylinders and main bearings.

Spark and throttle levers are arranged on

Duquesne 1906 Air-Cooled Touring Car.

W. J. GRUBE.

The Duquesne Construction Co., Jamestown, N. Y., manufacturers of the Duquesne car, who have just brought out their new 1906 Model Car, decided early this season regarding their policy for 1906, and the 1906 Model has been on the road for several months and has been put to every test by months of hard usage over very rough and hilly roads, and has covered in all about 6,000 miles without a break of any kind. They have about 100 machines nearing completion for early 1906 deliveries.

The Duquesne Company have a model factory, the power of which is supplied by water power from Chautauqua River. The main building is four stories high and has a floor space of about 30,000 square feet. The factory is fitted with the latest machine tools and in addition to their own body-making establishment the Company have their own electric plant and a complete electro-plating establishment. The company is amply financed and the prospects for 1906 are very bright indeed.

The Duquesne Car has no features not approved by modern practice and design, but several conveniences that have to be seen to be appreciated. The first of which is an ingenious starting device operated by foot pedal from the seat, which makes starting so easy a lady can start the motor. This is accomplished by a ratchet on engine shaft operated by steel pawl and foot pedal, which is returned to starting position with coiled spring. This device is exceedingly simple and well made, both ratchet and pawl being accurately cut and hardened and sufficiently strong to do the work. One downward movement suffices to start the motor, and in the writer's presence motor never failed to start. This is very desirable and removes one very objectionable feature.

Another nicety of the Duquesne is that the headlights are mounted on trunnions on main frame, and are connected to steering gear so that as the wheels are turned the lights turn in unison with the wheels, which is to be desired, especially in turning a sharp turn at high speed.

Another novelty of Duquesne design is the body, which is a double side entrance tonneau, which is entered by tilting front seat forward, which automatically opens tonneau door. The Company, however, will fit chassis with the usual side entrance body if so desired. The tonneau is exceedingly wide and luxurious and will seat three people comfortably.

The car has a 16-21 H. P. vertical air-cooled motor, a wheel base of 90 in., 32 in. Salisbury wood wheels fitted with 3½ in. tires (any make, American or Continental, being supplied); weighs 1750 lbs. Price, fully equipped, $2,000.00.

THE ENGINE.

The motor is a four-cylinder vertical. The cylinders have a bore of 3½ in., stroke 4 in., and develop 16-21 H. P. Cylinders are cast separately and each have 960 inches of radiating surface, radiating fins being exceedingly deep and thin. Valves are both mechanically operated and arranged in cylinder head, are 1⅝ in. diameter and interchangeable; in addition, the cylinders are fitted with auxiliary exhaust fitted with automatic valves. The cylinders are copper plated and oxidized, which makes a very neat and durable finish, and is said to assist in the cooling. The crank case is of aluminum divided in centre and is easily accessible. Cam shaft is entirely inside the engine crank case and is operated by steel gear on engine shaft and bronze gear on half time shaft. Cams are of large diameter, and hardened. Valve lifters are secured from turning by slotted bronze guide and hardened steel pin. Crank shaft is 1½ in. diameter; centre bearings 2⅝ in. long; main bearings 3 in. long; 6 in. flange for securing flywheel forged integral with crank shaft; an aluminum case encloses lower half of flywheel and transmission; this is bolted solid to main engine case and to the frame members. The

Duquesne 16-20 H. P. Car, showing Tilting Front Seat.

EAGLE SPORTING GOODS CO., BASEBALL MITTS

We present this year in our line of mitts and gloves a larger variety than ever before. In finger gloves we have embodied all of the up-to-date ideas in materials and styles, and by offering goods at all the popular prices are prepared to meet all demands.

In mitts we again call especial attention to our two justly celebrated patented features the Eagle Patent Thumb Strap and the Eagle Patent Lace.

151.—Eagle Special Catchers' Mitt. Designed especially for professional use, embodies suggestions from leading players. Made of best French calfskin, sewed with extra heavy wax thread, has a double front, contains all our leading Eagle features, padded with feathers if so desired.

Price . . . . . $13.00 each

No. 8

8.—Eagle Mitt. In general construction like No. 15, but made of finest special tanned horse-hide, soft and pliable.

Price . . . . . $13.00 each

7C.—A very attractive and serviceable mitt made of selected brown calfskin. Has padded heel ridge and Eagle patent thumb attachment, together with a double stitched palm. It is strong and very popular.

Price . . . . . $4.80 each

7H.—Thoroughly up-to-date Eagle mitt. Made with a horse-hide front and a green goat back. Represents unusual value for the price. Heel ridge.

Price . . . . . $7.00 each

10.—League Mitt. Made of good quality of horse-hide, trimmed with golden tan, equipped with the Eagle features.

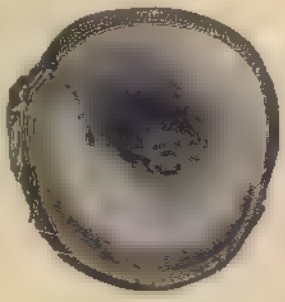
Price . . . . . $5.50 each

11A.—A green goat front with chrome back, strongly reinforced palm, and containing the two Eagle features. It is one of our best selling low priced mitts.

Price . . . . . $5.00 each

11.—Eagle Mitt. Also contains the two Eagle features and a strongly reinforced palm; dark red front, reinforced; back, golden tan.

Price . . . . . $4.20 each



No. 7H

4B.—Handsome pearl tan stock, brown back. It has a double palm and heel ridge, and is made with the patent thumb attachment.

Price . . . . . $2.80 each

4S.—Is the greatest mitt on the market at the price. It has a drab front with olive green back, has the patent strap, and also is made with a heel pad.

Price . . . . . $1.80 each

5C.—Is made of yellow stock front and wine back, trimmed in red, has a reinforced palm, patent strap.

Price . . . . . $1.30 each

See Terms page 3, and Discount sheet next back cover.

21L.—Brown leather front, canvas back; with Heel Ridge, made with patent strap. It is a very serviceable mitt at the price.

Price **$1.00 each**

Nos. 4 and 5.

21A.—Is the best low priced boys' mitt on the market. Yellow front and back, trimmed with olive green, has a heel pad and the Eagle Patent strap.

Price .. **70c each**

No. 21.

21 C.—Is a good durable mitt for boys. Made with yellow front and brown back.

Price **50c each**

Basemen's Mitts

No. 26S.

26S.—In general construction similar to the above mitts, but made from an especially strong drab calfskin. This stock is wholly reliable and is becoming very popular.

Price .. . **$5.70 each**

26R.—A carefully shaped mitt made with horsehide front and brown Yucatan back. Has heel ridge and connecting web.

Price .. .. **$3.80 each**

No. 26R.

No. 26D.

26D.—A carefully constructed baseman's mitt for the boys. Made throughout from very serviceable brown tan stock.

Price .. .. **$1.90 each**

27E.—Same as 26D, made from brown tan stock, with connecting web and heel ridge.

Price .. . . **$1.40 each**

See Terms page 3, and Discount sheet next back cover.

12. Baseman's Glove. Is made of carefully selected horse-hide, is heavily padded, lined throughout with leather, has welted seams. A great feature in this glove is the heel pad, consisting of a ridge of padding extending in a semi-circle from the thumb well up to the little finger. This, together with the connecting web as shown in the cut, forms a deep pocket and makes this glove one of the most popular on the market.

PRICE .. .. **$6.00 each**

12A.—Another popular glove for pitchers and 1st baseman has straight thumb, welted seams and heel ridge. Stock is selected horse-hide, and glove is felt lined.

PRICE .. .. **$5.70 each**

Nos. 12 and 20.

12S.—Is made throughout of stock similar to that used in our No. 12, and is made in the same careful manner. It does not have the heel pad and appeals strongly to the professional trade.

Price .. .. .. **$5.20 each**

20. A great favorite. Made in exact imitation of our No. 12 glove, but from stock slightly inferior in quality. Equal in every way to the best gloves of other makes, felt lined.

Price **$4.20 each**

14A.—Is a fine chrome tan leather lined glove, has heel pad, connecting web and welted seams.

Price .. .. **$2.70 each**

14.—Made of stock similar to No. 14A, but is felt lined and has no connecting web. Both these gloves are very serviceable.

Price .. .. **$2.20 each**

24Y.—A felt lined glove from selected Yucatan stock, made on the large pattern, with straight thumb and heel ridge.

Price .. .. **$1.50 each**

No. 14.

No. 23D

23R.—A handsome pearl tan fielding glove, made with heel ridge and connecting web. Has leather lined palm.

Price .. .. .. **$1.00 each**

23D.—Great value. Pearl tan stock, connecting web and heel ridge.

Price .. .. .. **50c each**

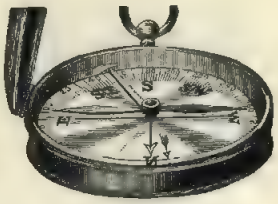
23A.—Very popular with the boys. Brown tan stock, made with web and heel ridge, and has leather lined palm.

Price .. .. .. **50c each**

See Terms page 3, and Discount sheet next back cover.

POCKET COMPASSES.

No. 2518-Ox.



No. 2509-45

No. **2518-Ox.** Gun Metal Hunting Case Compass, with Spring Cover, Engraved Silvered Metal Dial Divided from **0** to each **90** Degrees, Heavy Bar Needle with Jeweled Cap and Automatic Stop, Diameter 1¾ Inches ..... Each $3 75

No **2517-45.** Nickel Hunting Case Compass, Engraved Silvered Metal Dial Divided from **0** to **360** Degrees, Needle with Agate Cap and Automatic Stop, Diameter **1 3-4** Inches . . . . . Each 2 75

No. **2509-45.** Brass Compass, with Ring and Hinged Cover, Engraved Silvered Metal Dial Divided from **0** to **360** Degrees, Agate Cap and Stop to Needle, Diameter **1 3-4** Inches . . . . . Each 1 75

No. **2510-45.** Nickel Compass, with Ring and Hinge Cover, Engraved Silvered Metal Dial Divided from **0** to **360** Degrees, Agate Cap and Stop to Needle, Diameter **1 3-4** Inches. . . . . Each 2 00

SURVEYING COMPASSES.

No. 2560-½.

No. 2559 I-2.

Brass Pocket Surveying Compass. Folding Sights with Angular Hooks, Engraved Silvered Metal Dial with Raised Ring divided from **0** to **360** degrees, Jeweled Brass Cap and Stop to Needle, Socket for Jacob's Staff with Ball Point. Packed in polished mahogany box with hinged cover.

With **3** Inch Dial . . . . . Each $ 9 25
With 3½ Inch Dial . . . . . " 10 25
With **4** Inch Dial . . . . . " 11 25

No. 2560 I-2.

Brass Pocket Surveying Compass. Folding Sights with Angular Hooks, Engraved Silvered Metal Dial with Raised Ring divided from **0** to **360** degrees, Jeweled Brass Cap and Stop to Needle, **2** Spirit Levels visible through Dial, Socket for Jacob's Staff with Universal Joint. Packed in polished mahogany box with hinged cover.

With **3** Inch Dial . . . . . Each $12 00
With 3½ Inch Dial . . . . . " 13 50
With **4** Inch Dial . . . . . " 15 00

POCKET COMPASSES.

No. **2501-40.** Brass Compass, with Pull Off Cover, Paper Dial, Brass Cap on Needle, Diameter 1⅝ Inches .....Each $0 40

No. **1850-158.** Similar to No. **2501-40** ... " 25

No. **1510-45.** Nickeled Brass Compass with Ring, Open Face, Paper Dial divided from **0** to **360** Degrees, Diameter 1¾ Inches .....Each $0 65

No. **1510-50.** Same as No. **1510-45**, but **2** Inches in Diameter . . Each 75

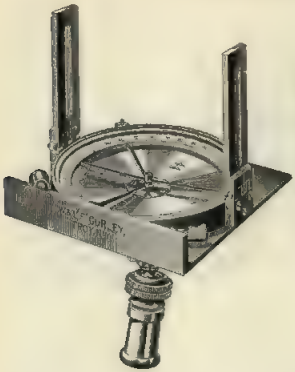
No. **2506½-45.** Brass Compass, with Ring, Open Face, Engraved Silvered Metal Dial, Agate Cap and Stop to Needle, Divided from **0** to **360** Degrees, Diameter 1¾ Inches .....Each 1 25

No. **2504-40.** Brass Compass, with Pull Off Cover, Engraved Silvered Metal Dial, Brass Cap on Needle, with Stop, Diameter 1⅝ Inches . .Each $1 00

No. **2507-40.** Brass Compass, with Pull Off Cover, Engraved Silvered Metal Dial, Divided from **0** to **360** Degrees, Agate Cap and Stop to Needle, Diameter 1⅝ Inches.....Each 1 50

No. **2533-50.** English Pattern, in Heavy Brass Box with Lifting Cover, Engraved Silver Plated Metal Dial, Raised, Divided from **0** to **360** Degrees, Polished Steel Bar Needle, set with Jewel. Automatic Stop to Needle, Diameter **2** Inches Each $3 00

SURVEYING COMPASSES.



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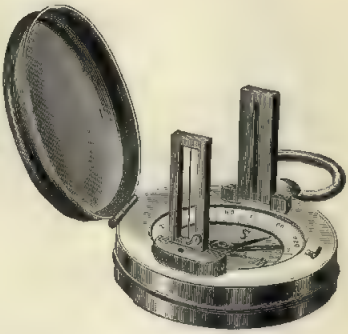


No. 2555

No. 338.

Brass Pocket Chronometer Compass, Folding Sights, Engraved Metal Dial, Raised Ring, 3½ Inch Needle, Jeweled Cap and Stop, 2 Spirit levels, rectangular side on one edge and swinging pendulum for determining grades, Socket for Jacob's Staff with Ball Joint. Packed in Mahogany Box ..... Each $24 00

No. 2555.

Nickel Pocket Surveying Compass, with Hinged Cover and Folding Sights, Silvered Metal Dial Engraved with Cardinal Points, and Raised Ring Divided from 0 to 360 Degrees, Jeweled Cap and Stop to Needle. Diameter, 2 Inches ..... Each $6 00

Nos. 3154 and 3155.

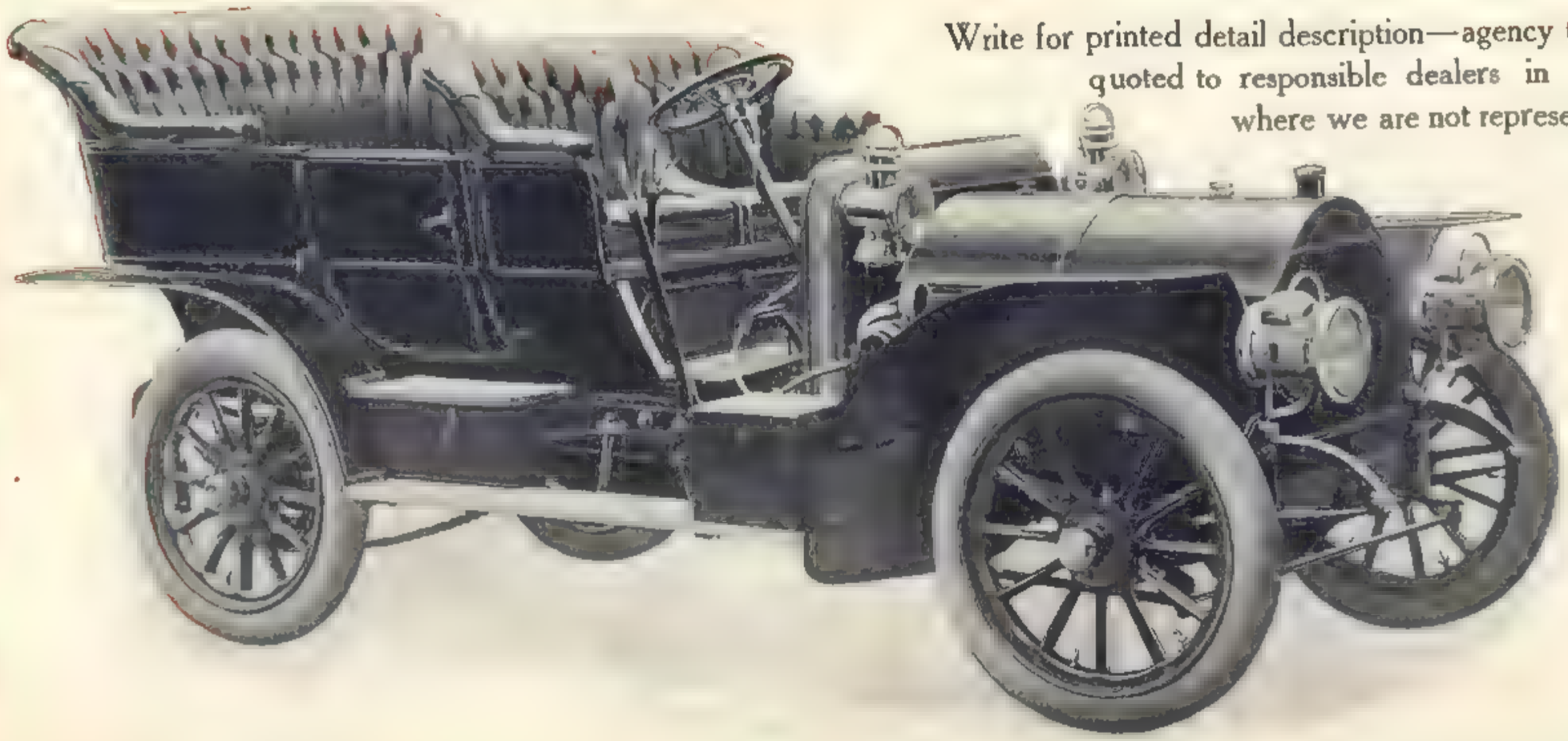
Gurley.

No. **3154.** Government Pattern Mahogany Case 3 Inches Square, Raised Circle, Superior Needle 2 Inches Long, with Stop. Gurley, maker..... Each $5 00

No. **3155.** Same as **3154**, but 3⅝ Inches Square and Needle 2½ Inches Long. " 6 00

The Chadwick

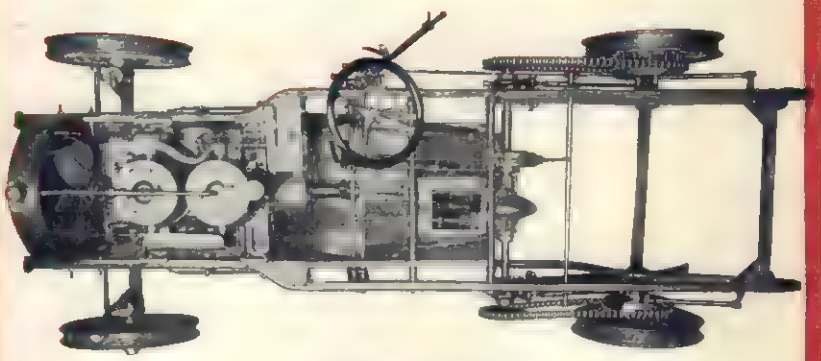
1907 Model 40-45 H. P. Price, $5,000



Write for printed detail description—agency terms quoted to responsible dealers in cities where we are not represented.

FAIRMOUNT ENGINEERING WORKS, 3205 Spring Garden St., Philadelphia, Pa.

The Chadwick Car



CHASSIS PLAN

From the above illustration you will note that the three salient points of *CHADWICK* design are *strength, compactness* and *simplicity.* This chassis shows the achievement of years of conscientious endeavor to produce the finest motor car in the world, and the design embodies all the best features known to the art of automobile making. The *CHADWICK* is an *easy-to-operate, high-powered car* which is *speedy, safe, reliable, durable, quiet* and *comfortable.*

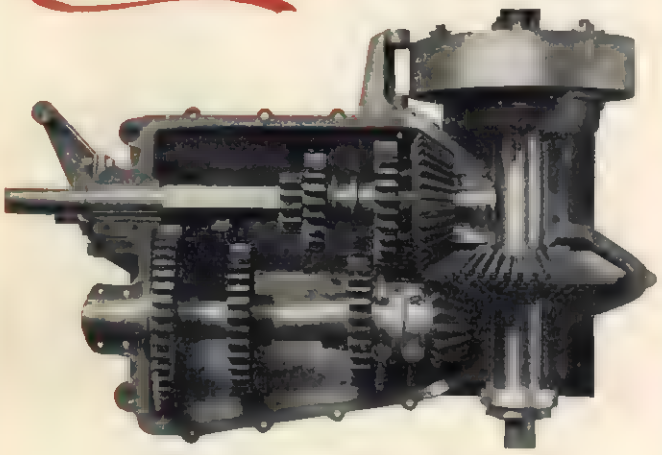
The engine has four 5 x 6" cylinders, which are copper-jacketed in pairs, so that the water circulation passes around the entire cylinder and all valves. Every part of the *CHADWICK* car has been carefully tested, and consequently there is not a single weak spot.

The *CHADWICK* is a large car which turns in a small space. Mechanical ingenuity and long experience are the two elements which have enabled us to manufacture a car unequalled in any country at any price.

Fairmount Engineering Works

3205 Spring Garden St., Philadelphia, Pa.

The Chadwick Transmission



Chadwick 1907 sliding gear speed change, patented.

The *CHADWICK TRANSMISSION* is the most easily operated and quietest speed change gear to be found in any large car. The gearing is of "treated" or spring-tempered chrome nickle steel, and all parts are carefully finished and fitted. Having four forward speeds, it gives the operator a choice of gears suitable for all road conditions. The superiority of the *CHADWICK* gear can be best appreciated by an examination and demonstration.

The Chadwick Motor

has been fully described in previous issues of this Journal. Briefly, it is the simplest large engine made, and will outlast the best high-speed motors made in either America or Europe, because of the design, the secret process with which we treat the steel and the care with which cylinders and pistons are finished.

Fairmount Engineering Works

3205 Spring Garden St., Philadelphia, Pa.

The Chadwick Car

is marketed to supply the demand for a thoroughly high-grade, American-made automobile. While excellent motor cars are manufactured in this country, a certain class of buyers have heretofore preferred foreign-made cars, believing them to be better in design, quality of material and workmanship. The CHADWICK CAR will appeal to this class of buyers. Not only is it equal to the extremely high-priced, imported automobiles, but it is superior in many respects. The great care exercised in manufacture, together with the superiority of design and equipment, makes it a car of par excellence, and one which is readily appreciated by the intelligent and exacting buyer.

The CHADWICK GUARANTEE is unusual. It is liberal, because experience has proven that the car is made right and consequently can afford to be sold with a broad warranty.

Correspondence solicited from individuals interested in high-grade motor cars, and dealers who wish to handle a superior automobile.

Fairmount Engineering Works

3205 Spring Garden St., Philadelphia, Pa.

Franklin 1907 Air-Cooled Improvements

The H. H. Franklin Mfg. Co., Syracuse, N. Y., announce that their 1907 line will consist of the same four models which comprised it during the past season, viz.: Model G, 12 H. P., 4-cylinder touring car, $1850; Model D, 20 H. P., 4-cylinder, 5 passenger car, $2800; Model H, 30 H. P., 6-cylinder, 7-passenger car, $4000; Model G, 12 H. P., 4-cylinder runabout, $1800.

The distinctive Franklin features will be retained in all these models, viz.: Auxiliary exhaust, laminated wood sills, full elliptical springs.

And refinements and improvements have been made in many places, the bodies have increased in size and are planned to give the greatest convenience, and the lines improved wherever possible. Underneath the front seat and tipping back into the tonneau is a tool box so arranged that when not held in an open position, it closes itself. In this can be stored a large amount of special equipment, extra tubes, oil, etc. Tool drawers are placed forward underneath the front seat for the regular repair equipment. These are easy of access and are much more satisfactory than the unsightly tool boxes usually placed on the running board of cars. Underneath the tonneau seat is a large receptable for robes and various articles which it may be desired to stow away. Handles, foot rests and robe rails are also conveniently located.

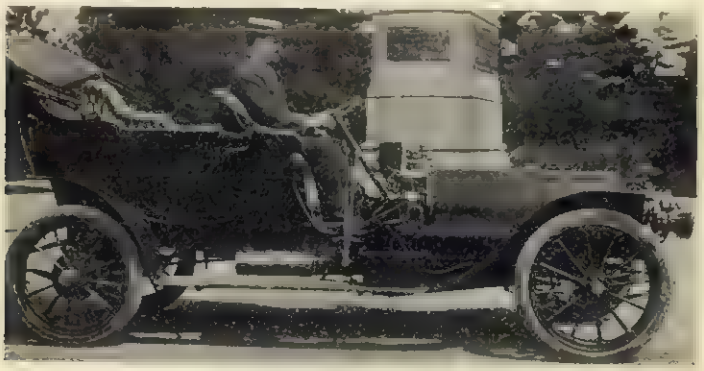
The enclosed style of front mud-guard as used last season is still retained, but has been improved in that a shortening of the running board has been permitted by removal of the tool boxes, and the guard is brought back more gradually, which shape adds wonderfully to the symmetry of design and increases greatly its capacity as a mud protector.

The dash design has also been changed on Models D and H, and the oiler removed from the dash of all cars, standard color of bodies royal blue, with black leather upholstery.

Larger wheels and tires are used on all models, giving more road clearance, Model H having 36x3½ front and 36x4 rear; Model D, 34x3 front and 34x3½ rear, and Model G, 30x3 front and 30x3½ rear. Wheel base of Model G is increased to 90 in., Model D to 105 in. and Model H to 120 in.

All models are equipped with the new automatic gear shifting device illustrated. The change gear quadrant and gear movement is so arranged that the operation of changing from one speed to another is automatic. For instance, when in the neutral position and a change to intermediate or low is desired, it is only necessary to push or pull the change gear lever until it comes to a stop; to change from low to intermediate, you have only to push until the stopping point is reached. The change from intermediate to high, from low to reverse or from intermediate to neutral or low is accomplished by a slight pressure on latch lever and pushing or pulling back on change gear lever, as desired, places the gears in position. This arrangement is so simple and yet so positive as to make the passing of the desired gear when in a precarious position, and where operator is most liable to become excited, an utter impossibility. By placing the latch lever on the back side of lever handle and well down, precludes the possibility of its becoming accidentally operated; also makes certain of its release when lifted for a change from high to intermediate gear.

The entire mechanism is worked out on a natural movement basis; that is, the movements necessary for the operation of



Franklin air-cooled 1907 Model H, 6-cylinder 30-H. P.; 7 passengers. Front tires 36x3½, rear 36x4; wheel base 120 in.; price $4000; also furnished with limousine body.

Franklin 30-H. P. 6-cylinder air-cooled engine, showing new copper flanges.

changing gears are such as an operator would naturally be inclined to make.

The transmission universal joint block is of new design peculiar in that its shape prevents all possible wear and lost motion, practically forming a unit between the engine and rear wheels, yet being so constructed as to compensate any side motion or position variance.

The clutch driver in its shape forms an oil reservoir through which by centrifugal force the fly-wheel hub and driver are constantly oiled.

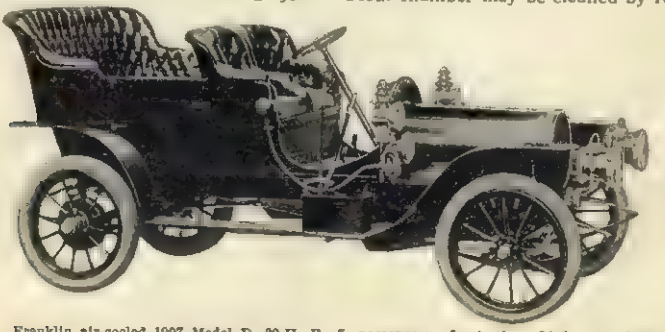
The valve action has been improved by changing the hyperbolical shaped cams in a manner which gives a slower and quieter movement. The position of the walking beams as regards centres has also been changed, reducing the action to such an extent that the motor is practically noiseless. It is true that a noiseless motor does not produce a noiseless car, but as friction has been reduced to the minimum and all connections are so arranged as to be noiseless in operation, the 1907 Franklin cars are extremely quiet.

A new style of connectionless intake pipe is used on all models, this being so designed and constructed as to make a degradation in the richness of the mixture through air leaks between the carbureter and cylinder impossible.

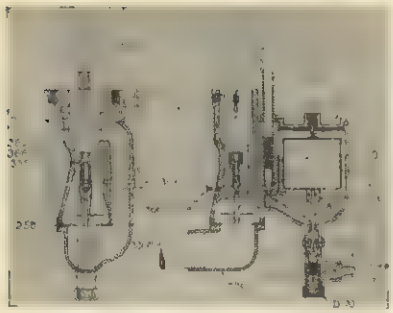
The oiler is of the force-feed bleeder-valve type and has been placed underneath the hood close by the side of the engine base where it is driven through direct gear connection with the cam shaft. The emergency brakes have been increased in size. A new and novel device which operates between the timer and crank shaft, and automatically governs the spark, retarding it when necessary, prevents the possibility of starting the engine on an advanced spark.

The carbureter is made in the Franklin factory, where the development of a carbureter best suited to air-cooled engine requirements has been accomplished. The 1906 style has given universal satisfaction and from extensive tests the improved carbureter to be placed on 1907 cars, it is evident, will in every respect be far superior.

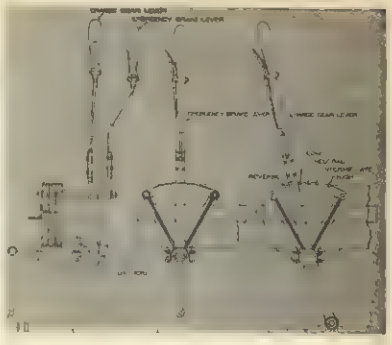
Referring to the illustration of the new Franklin carbureter, the gasoline enters the float chamber A through passage D-171, past wire gauze D-169 and fills float chamber up to C D, when float A-112 rises and shuts off the passage by ball valve 2762. By having gasoline enter from below all sediment settles to the bottom of D-167, which may be cleaned by removing cap D-170. Float chamber may be cleaned by removing



Franklin air-cooled 1907 Model D, 20-H. P., 5 passengers; front tires 34x3, rear 34x3½; wheel base 106; price $2800.



1907 Franklin Carburetor.



Franklin 1907 Emergency Brake and change gear control.

cap D-153 and pulling out float A-112.

Air enters by passage G and suction lifting valve 2580, and passes by spray nozzle 3629, where it vaporizes the gasoline which comes by needle valve B and through passage E to nozzle 2786. (Models G and D have a newly-devised three-spray nozzle, while Model H has a six-spray.) The amount of gasoline feed is regulated by needle valve B. The amount of air and vapor going to engine is controlled by throttle valve 2765, which is connected to governor. Throttle valve 2765 is also connected to by pass valve 3661. When throttle valve is nearly shut, so that engine will just run, by pass valve 3661 is shut and all air must pass by nozzle 3629. As throttle valve is opened, by pass valve is also opened so that extra air may be furnished the mixture, and the more throttle valve is opened the more by pass valve is opened, thus letting in more air, which does not pass nozzle 3629. The mixture is thus diluted as the engine speeds up and is thereby maintained of the proper quality for all conditions of running. Levers 2564 and 2557 are connected by a rod and act together, being controlled by the governor of the engine.

It will be noticed that there are no delicate springs in this mechanism, and that therefore the operation is positive and exact. The passage E may be cleaned by removing screw H and the nozzle 3629 may be cleaned by removing the suction pipe and putting a wire down into it through passage I.

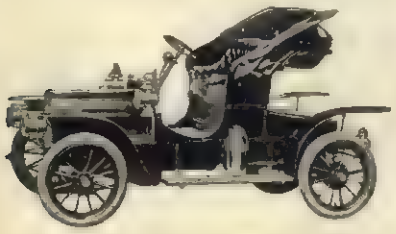
Spring A-107 serves to steady needle valve B and keeps it from unscrewing. Needle valve B is connected by universal joint J to stem, with handle in front of dash easily reached from seat.

To assist in heat radiation on the six-cylinder engine, the cylinders are encircled with copper flanges, which increase in the number per cylinder from the front to the back cylinder. From the nature of the metal used and the irregular placing of these flanges, a better and more effective distribution of the air draft, which is forced through by the forward air fan and drawn back by the suction fan in the fly-wheel, is obtained, perfecting the Franklin system of air-cooling.

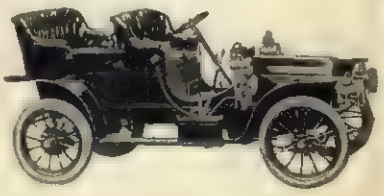
The rear axle as used on Models D and H is of the live floating type, fitted thru out with ball bearings, and is so designed that the load of the rear wheels is not carried on the driving axle, but on an extension of the main tube.

The crank shaft is this season made of specially treated nickel steel, with an elastic limit of .110, and is machined by turning, grinding and lapping, with a limit in diameter and variance between shoulders of .005

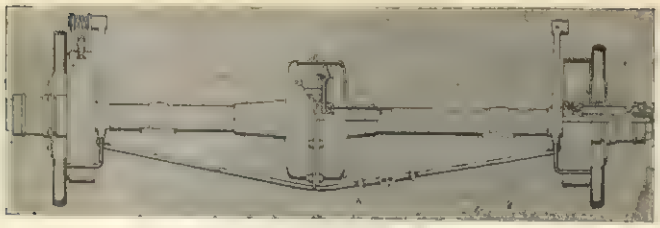
After much thought and exhaustive experimenting a fan, the blades of which form a true helix, has been brought out. In this a fan has been developed which will, with the least expenditure of power, throw the largest volume of air. The method of driving this fan is also peculiar to the Franklin car and is accomplished through direct shaft and gear drive from the crank shaft.



Franklin air-cooled 1907 Model G Runabout; price $1800.



Franklin air-cooled 1907 Model G 4-cylinder 12-H. P. Front tires 30x3, rear 30x3½, wheel base 90-in.; price $1850.



Franklin Rear Axle.

On account of the great velocity, the revolutions being such as to produce a current of air at a celerity of one mile per minute when engine is at high speed, it has been necessary to construct the fan connections in a manner similar to that of the clutch. The object in doing this is to make the drive more positive and still have it so arranged as to slowly and easily reduce the fan momentum when the engine is stopped instead of by a sudden jerk as would be the case were it attached firmly to the shaft.

The clutch consists of six fibre and five copper discs, alternated and so arranged that the copper discs are attached direct to the fan shaft, but are free to move laterally. The fibre discs, however, are not attached to the shaft, but through a series of dowels are fastened to the fan hub. These discs also have a lateral movement.

Placed against the discs at the outer end is a thrust plate, which is forced back by a tension spring, this spring being held in place by a tension spring nut. The action of the thrust plate, tension spring and nut is to force together the fibre and copper discs which, through friction with each other, connect the shaft with the fan, driving it in a manner as above desribed.

All models are also equipped with flywheels of the fan type, which draw the air with great force past the engine cylinders, completing a perfect system of air-cooling.

By reference to the sectional drawing of the 1907 engine the action of many important parts can be seen. For instance, the division of the walking beams forward and back of working centre, the periphery of the hyperbolic cam which mechanically operates all valves, the location of the exhaust valves and their action, the position of the oiling device and method of operation, all of which are new features.

The steering yokes on Models D and H are fitted with ball bearings, thereby reducing wear to the minimum and producing a steering device which is very easy of operation.

A new device is used for spark and throttle control. On Models D and H this is placed on top of steering wheel. Model G control is similar to that used during the past season.

Sectional view of Franklin 1907 air-cooled engine.

Mr. G. M. Ritchie, formerly superintendent of the Auto Car Co., Ardmore, Pa., and later superintendent with the Royal Motor Car Co., of Cleveland, O., has taken a position as superintendent of the Continental Motor Mfg. Co., Muskegon, Mich.

The Dragon Automobile Co., of Philadelphia, has opened offices in the Campau Bldg., Detroit, Mich. For the coming season they intend to build a 4-cylinder Light Touring Car, shaft drive sliding gear transmission, to sell for about $1500 to $1600. Also a Gentlemen's Roadster on the same chassis as Touring Car. They are equipping their factory for a capacity of 2000 cars.

To show the great mileage ability of "electrics" and the remarkable development made in electric vehicle construction in the past year, F. A. Babcock, Jr., and Walter Winchester, of the Babcock Electric Carriage Co., Buffalo, N. Y., drove one of the "Babcock" Model 5 electric cars from Buffalo to Rochester on one charge of the battery, a distance of 71 miles. After charging battery in Rochester they returned to Buffalo, going an extra five miles out of their way, making the total mileage for the day 147 miles.

pinion bearings each containing 13 11-16 in. balls. Ball races and cones are hardened and accurately ground. The gear and driving pinion are of steel, case hardened 4-in. pitch. Differential case is a steel casting, differential gears case hardened.

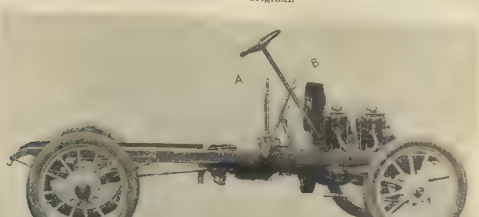
Driving shafts are of high carbon steel squared into differential and driving clutches on hubs, driving shafts oil hardened on squared ends. The case is split horizontally, the upper half is easily detached, allowing differential and gears to be easily removed. Axle tube is brazed into malleable case and wheel bearings are mounted on axle tube.

Cooling system is by positively geared circulating pump, and Whitlock radiator with fan. All water connecting pipes are of brass and easily removed. The pump has flexible connection between shaft and drive gear.

Cooling fan is mounted on forward engine cylinder on ball bearings and driven by 1-in. flat belt.

Lubrication is by Hill precision oiler positively driven with oil leads to all main bearings and sight feeds on dash.

Dash is flat laminated wood with brass moulding. Hood is of new shape, distinctly original.



Side view of the Cleveland 1906 chassis. A is change speed lever; B emergency brake lever; C clutch pedal; D shaft brake pedal.

Brake drums are integral with inner hub flange. Brake is a continuous bronze expanding band cam actuated and holds equally well forward or back. The propeller shaft also carries service brake which is of the clamp band variety.

Front axle is an I beam section nickel steel forging, steering knuckles high carbon forgings oil hardened. Pivots oil hardened, pivot bushings case hardened. The end bearings of both yoke and bed are case hardened. Bearings are ball, the inner bearing has eleven 11-16-in. balls. The outer hub bearing eleven ½-in. balls.

Steering gear is irreversible, nut and screw type. The casing is a malleable casting in single piece, substantially fastened to the frame.

A simple float feed carburetor of the spray type is used and as proved by demonstration gives great flexibility.

Spark and throttle control is located on top of steering wheel operated by button and sector. Change gear and emergency brakes are operated by levers at the side of the seat. The clutch is operated by left hand foot pedal. Brake on transmission shaft is operated by right hand foot pedal. The car seems to have an abundance of power and operates very quietly, the clutch at all times moving the car very smoothly and starting gradually and comfortably. The Cleveland Co. are looking forward to a very prosperous season and expect to market from two to three hundred cars, the majority of which are well under way.

Behlehem Steel Company, South Bethlehem, Pa., (sales department, 100 Broadway, N. Y. City, are now manufacturing for use in automobiles, nickel steel forgings of every description. A drop forge plant, including presses, hammers, etc., has been installed at their works. From the long and varied experience of this company in making and treating the highest grades of steel, they are able to obtain the best possible physical properties. Since the organization of this department about 4 months ago, business has increased to such extent that the entire drop forge shop will be taxed for five or six months to come. In addition to drop forgings, they are in a position to furnish manganese bronze castings, of high physical properties almost equal to those of steel castings.

The Wayne Automobile Co. have chartered a special car, which will be in charge of New York Branch Manager Kull, to visit the New York show, Florida races and the Chicago show.

H. C. Shiland has been appointed sales manager for the Buick Motor Co., of Jackson and Flint, Mich., and has his headquarters at the Jackson office. He was formerly branch manager at Chicago.

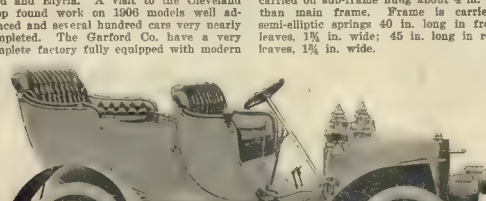
1906 Cleveland Motor Car

BY W. J. GRUBE

The Cleveland Motor Car Co., 380-390 Erie street, Cleveland, Ohio, have just completed and shipped to their New York agent the first 1906 model.

It has a 30-36 H. P. 4-cylinder motor in front, shaft drive, with side entrance Victoria pattern body. Has a wheel base of 104 in., wheels 34 in. diameter, shod with 4 in. tires, weighs fully equipped 2300 lbs. and sells for $3,500.

The complete chassis is the product of the Garford Co., whose executive office is at Elyria, but who have factories at both Cleveland and Elyria. A visit to the Cleveland shop found work on 1906 models well advanced and several hundred cars very nearly completed. The Garford Co. have a very complete factory fully equipped with modern



The 1906 Cleveland 30 to 36 H. P. 4-cylinder car, product of the Cleveland Motor Car Co., 380-390 Erie St., Cleveland, Ohio. Price $3500; weight 2300 lbs.; tires 34x4 in.; wheel base 104 in.; shaft drive; Simms-Bosch magneto, low tension ignition.

up-to-date machine tools and every part of the Cleveland car with the exception of radiator, magneto and oiler is of their design and manufacture. A great part of the product is made on automatic screw machines, even gear wheel blanks being made in this manner and every care taken to secure accuracy of workmanship throughout. All gears after being cut in the usual modern way and hardened are accurately ground all over, including the teeth, insuring the truth of the surfaces by removing the effect of the warping that may have occurred during the hardening process. High carbon steel is used generously, in fact almost exclusively. To quote the words of Mr. J. G. Heaslet, the designer. "Machinery steel has no place in automobile construction excepting for screws."

The design of the 1906 model of the Cleveland is very similar to the 1905 model. The 1905 model as a whole having shown excellent qualities. The most noticeable changes are that the motor, which has been increased to 30-36 H. P., is fitted with a Simms-Bosch magneto low tension ignition which has proved so popular abroad. In outward appearance the car is considerably improved. Bed is of Victoria pattern with extremely large and roomy tonneau. The rear seat being 57 in. wide, doors are 23 in. wide, the seat is very deep and comfortable, the tonneau is fitted with adustable foot rest held in place by straps and can be moved forward or back, and in addition to the added comfort secured, this foot rest is fitted with door and makes a convenient carrying space.

The frame is of pressed steel, motor being carried on sub-frame hung about 4 in. lower than main frame. Frame is carried on semi-elliptic springs 40 in. long in front 6 leaves, 1⅝ in. wide; 45 in. long in rear 7 leaves, 1¾ in. wide.

THE MOTOR.

The motor has 4 cylinders, vertical water-cooled. Cylinder bore 4½ in., stroke 5¼ in. Cylinders are cast in pairs with heads and water jackets integral. The water jacket for each pair is fitted with two brass hand plates and two plugs easily removable for cleaning. Valves are all mechanically operated and are 1⅞ in. diameter, and are interchangeable. Plugs over valves are secured by yoke and one nut, valve guides are of hard bronze and secured to crank case in the same manner.

Crank shaft is 1⅝ in. diameter, 2⅞ in. wide at pins, main bearings 4⅝ in. wide at flywheel end, 3 in. wide center bearing, and 2¾ in. front bearing. Flywheel is secured to crank shaft by 6 in. diameter flange forged integral with crank shaft, which is of 50° carbon steel toughened by special process.

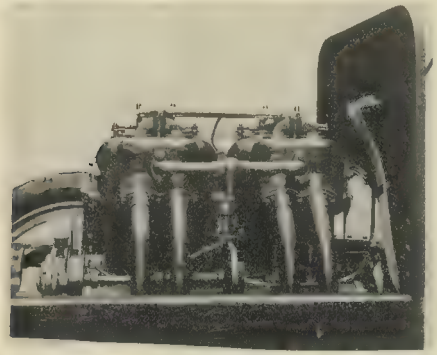
Crank case if of aluminum and crank is secured to upper half of case by 6 ¾-in. 50° carbon steel studs, which pass entirely through crank case with castle nuts and split keys on both ends. These studs take the thrust of explosion. The lower half of crank

give excellent results. Ring oilers are supplied throughout.

The clutch is aluminum cone leather faced and is extremely light, preventing shock to

PROPELLER SHAFT AND REAR AXLE.

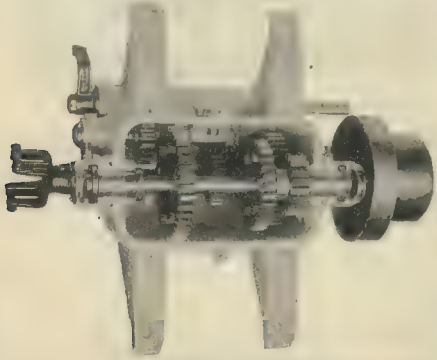
Propeller shaft is of 50 carbon steel, oil hardened at the rear universal joint, which is the sliding member, and is of generous



The Cleveland Motor Car Co.'s 1906 30-35 H. P. 4-cylinder engine, exhaust side, showing pump and water connections.

gears. Universal joint from clutch to transmission prevents any slight deviation of the shafts from true alignment and prevents

proportions. Forks are of high carbon steel oil hardened, pins case hardened. The bevel gear driven rear axle is of the floating



The Cleveland Motor Car Co.'s 1906 transmission.

binding and undue wear in the bearings. The clutch is so arranged that there is no end thrust on engine from clutch.

type; bearings are ball, the inner bearings containing 13 ⅞ in. balls. The outer bearings 15 11-16 in. balls. The outer and inner

case is a removable oil pan, held in place by studs and nuts.

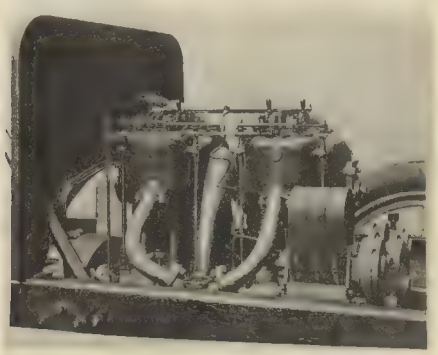
Connecting rods are of H section nickel steel only ⅛ in. thick in web; piston end is hardened but not bushed; crank pin end brasses are of hard bearing bronze.

Piston is of hard grey iron fitted with 4 rings tongue lapped. Pistons, cylinders and rings are ground all over.

Piston pins are hollow and no pains are spared to make reciprocating parts as light as is consistent with strength. Valve cams are forged integral with cam shaft and are of large diameter and case hardened. The large diameter of cams eliminates a large percentage of noise. The half-time gears are of bronze cased in aluminum case.

with mica. The fixed point can be removed without disturbing any other part. The movable point is fixed on the sleeve with a spring between it and the operating lever, which assures it being held in firm contact.

The advance of ignition is obtained by four eccentrics which move the trip levers in unison and cause the spark to occur early or late, exactly as with the jump spark system. This system is used quite extensively abroad, but to the writer's knowledge this is the first application to an American made car. Asked as to its efficiency, Mr. Heaslit grew quite enthusiastic and said it was possible with it to get a much more correct timing and the spark was always quite hot and the charge need not be fired so early in the stroke, there-



The Cleveland Motor Car Co.'s 1905 20 to 30 H. P. 4-cylinder engine, inlet side, showing Simms-Bosch magneto and igniter mechanism.

IGNITION.

Ignition is by Simms-Bosch magneto, which is mounted on an extension cast integral with crank case. It is gear driven by spur gears and armature revolves at the same speed as the engine crank shaft. The ignition mechanism is mounted in plugs over the inlet valves, which are held in place by yoke and one nut and are instantly removable. The plugs have planed grooves which register with the feet of the yoke and assure the igniter being replaced in correct position. The ignition mechanism is operated by four vertical shafts ⅜ in. diameter, which are driven by bevel gears on the half-time shaft. The cams that operate the trip to igniter are clamped to the top of these shafts and timing is accomplished by the position in which these are set.

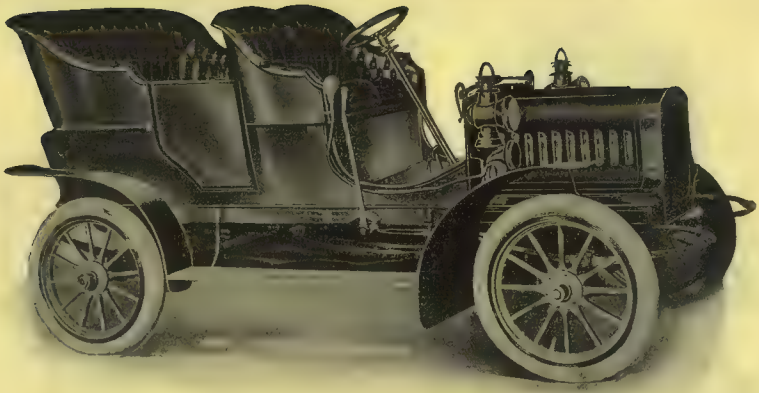
A convenient arrangement for timing valves and igniter are marks on flywheel and index on crank case. Igniter points are of imported nickel alloy, fixed points insulated

by giving more positive and less negative work than with the jump spark system.

With this simple mechanical igniter the timing is boys' play, and it does entirely away with spark coils, vibrators, timers, spark plugs, oil soaked insulation, and batteries. All parts of the igniter mechanism are hardened and ground and the system is undoubtedly a step in the right direction.

TRANSMISSION.

Transmission is by a sliding gear, giving three forward and a reverse direct drive on third speed. Shafts are of high carbon steel oil hardened and accurately ground to size; two main gears are case hardened, all other gears are oil hardened. Individual gears are bolted to flanges forged integral with shafts, gear bolts positively locked with cotter pins. Sliding train is mounted on squared shaft. The case is oil-tight, of aluminum, with removable cover for inspection. The bearings throughout the transmission are hardened steel bushed and this construction is said to



1906, MODEL C, AUBURN

Auburn Automobile Co., **Auburn, Ind.**

Details of the AUBURN

PAINT, Royal Blue Body and Yellow wheels. No better job of painting can be done.

WHEELS, 30 x 3½.

WHEEL BASE, 94 inches.

MOTOR, 5 x 5, 20 H. P., guaranteed.

SPEED, 3 to 40 miles, guaranteed.

GASOLINE, 12 gallons.

WATER, 6 gallons.

2 Oil Lamps, complete set of tools and Horn.

Write us now for terms and agency for 1906.

Auburn Automobile Co.

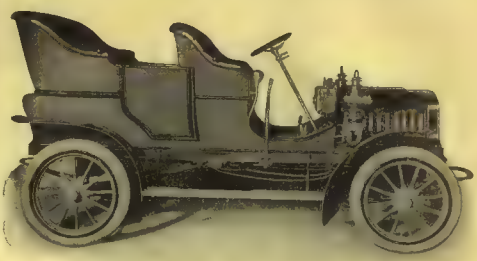
Auburn, Ind.

AUBURN

The Auburn is constructed of the best material money can buy and is built and designed by two of the best experts in the world.

Our car runs and runs all the time. We have as little trouble as any other concern in the business. Now what more do you ask. We have the goods at the right price and we are giving you more for the money than any other concern you can name. These are facts and not hot air.

Auburn Automobile Co.
Auburn, Ind.



1906, Model C, Auburn

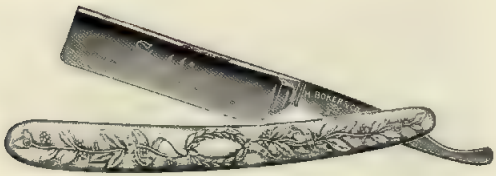
This car has a 5 x 5 motor and will do any stunt that any other car will do with the same size motor. We do not care what make the other car is, we make no exception.

Auburn Automobile Co.

Auburn, Ind.

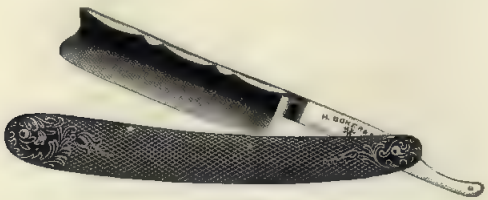
RAZORS.

Boker **Brand.**



No. 1511.

No. **1511.** 5-8 Inch, Square Point, Half Concave, Crocus Polished Blade, Fancy Grained Celluloid Handle.....Per Dozen $36 00



No. 1821

No. **1821.** 5-8 Inch, Hollow Point, Half Concave, Crocus Polished Blade, Ivory Shank and Tang, Carved Rubber Handle .....Per Dozen $40 00

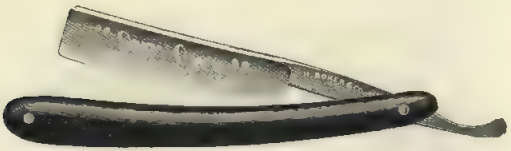
No. 2056

No. **2056.** 5-8 Inch, Round Point, Half Concave, Crocus Polished Blade, Pearl Shank and Tang, Carved Rubber Handle.....Per Dozen $42 00

Half Dozen in a Box

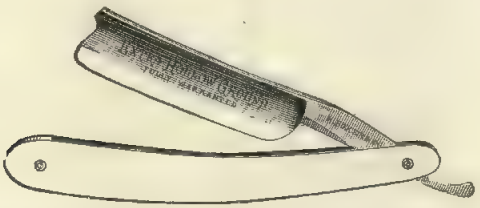
RAZORS.

Boker **Brand.**



No. 226.

No. **226.** 5-8 Inch, Square Point, Hollow Ground, Oval Rubber Handle. . Per Dozen $18 00

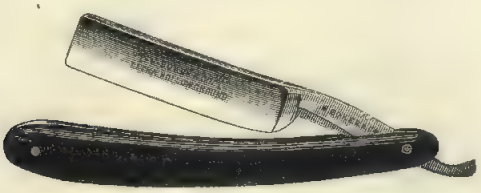


No. 235

No. **235.** 4-8 Inch, Hollow Point, Three-Quarter Concave, Oval Rubber Handle, Per Dozen . $25 00

No. **236.** 5-8 Inch, Square Point, Three Quarter Concave, Oval Rubber Handle Per Dozen 25 00

No. **237.** 6-8 Inch, Square Point, Three-Quarter Concave, Oval Rubber Handle Per Dozen 25 00



No. 346.

No. **345.** 4-8 Inch, Square, Three-Quarter Concave, Oval Rubber Handle. Per Dozen $27 00

No. **346.** 5-8 Inch, Square, Three-Quarter Concave, Oval Rubber Handle " 27 00

No. **347.** 6-8 Inch, Square, Three-Quarter Concave, Oval Rubber Handle " 27 00

Half Dozen in a Box.

RAZORS.

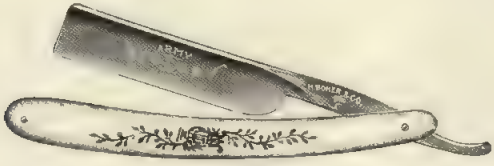
Boker TRADE MARK. **Brand.**

No. 101

No. **100.** Red Injun. **4-8** Inch, Square Point, Full Concave, Filed and Gimped Tang, Oval Rubber Handle..... Per Dozen $36 00

No. **101.** Red Injun. **5-8** Inch, Square Point, Full Concave, Filed and Gimped Tang, Oval Rubber Handle..... Per Dozen 36 00

No. **101 Rd. Pt.** Same as No. **101**, with Round Point..... " 36 00



No. 1366

No. **1366.** **5-8** Inch, Square Point, Half Concave, Crocus Polished Blade, Filed and Gimped Tang, German Silver Inlaid, Grained Celluloid Handle..... Per Dozen $30 00

No. 1056.

No. **1056.** **5-8** Inch, Hollow Point, Half Concave, Crocus Polished Blade, Carved Rubber Handle..... Per Dozen $30 00

Half Dozen in a Box.

RAZORS.

Boker TRADE MARK **Brand.**

Case No. 1081.

No. **1081.** Six Razors in Satin Lined Leatherette Case, Assorted Crocus Polished Blades, Assorted Fancy Handles..... Per Case $16 00

CORN RAZORS.

No 25

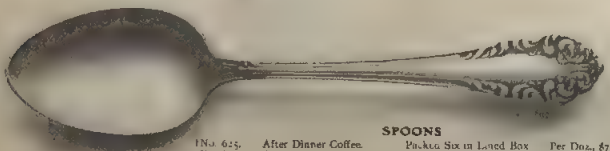
No. **25.**	Crocus Polished Blade, Oval Rubber Handle.....	Per Dozen	$12 00
No. **26.**	Crocus Polished Blade, Oval Grained Celluloid Handle.....	"	14 00
No. **27.**	Crocus Polished Blade, Oval Pearl Handle.....	"	24 00

COMMUNITY SILVER

AVALON

RICH, without being over-elaborate, the Avalon design commends itself to people of taste. The bright finish of this design adds brilliancy to the table, while the smooth surfaces diminish wear and facilitate cleaning.

Community Silver has the handsomest designs. It has the heaviest plate. It wears the longest. Its quality is as standard as Sterling. It yields the largest profit, and is the best advertised and most satisfactory line to handle.



SPOONS

†No. 625.	After Dinner Coffee.	Packed Six in Lined Box	Per Doz., $7.50
†No. 625A.	Gilt After Dinner Coffee.	" " "	" " 11.50
†No. 601.	Five O'Clock Tea.	Packed Six in Unlined Box	" " 7.50
†No. 601X	Gilt Five O'Clock Tea.	" " "	" " 11.50
†No. 602.	Tea.	" " "	" " 7.50
†No. 602X	Gilt Tea.	" " "	" " 11.50
†No. 603	Dessert.	" " "	" " 13.50
†No. 605	Table.	" " "	" " 15.00

FLAT HANDLE FORKS

†No. 606.	Dessert.	Packed Six in Unlined Box.	Per Doz., $13.50
†No. 607.	Medium.	" " "	" " 15.00
†No. 608.	Child's.	" " "	" " 13.50

HOLLOW HANDLE KNIVES

*No. 611.	Medium.		Packed Six in Flannel Roll.	Per Doz., $30.00
*No. 612.	Dessert.		" " "	" " 29.00
*No. 630	Medium.	Scimitar and Swaged.	" " "	" " 30.75
*No. 631	Dessert	" "	" " "	" " 29.75
*No. 733.	Child's.		" " Lined Box.	" " 27.00

HOLLOW HANDLE FORKS

*No. 613.	Medium.	Packed Six in Flannel Roll.	Per Doz., $30.00	
*No. 614.	Dessert.	" " "	" " 29.00	

SOLID HANDLE EMBOSSED STEEL KNIVES

*No. 615.	Medium.	Packed Six in Racked Box.	Per Doz., $15.00	
*No. 616.	Dessert	" " "	" " 14.50	
*No. 617.	Medium.	Scimetar Swaged	" " "	" " 15.75
*No. 618.	Dessert.	" " "	" " "	" " 15.25
*No. 698.	Fruit.	" " " Lined	" " "	" " 10.00

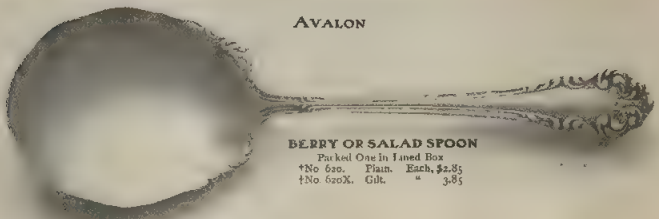
† Take Flatware Discount.

* Take Cutlery Discount.

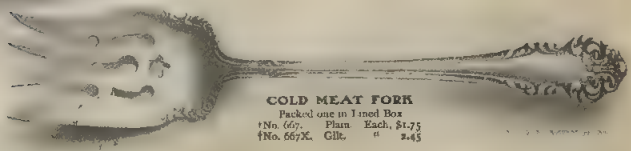
Reproduction five-sixths size.

COMMUNITY SILVER

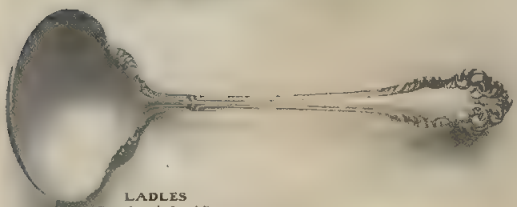
AVALON



BERRY OR SALAD SPOON
Packed One in Lined Box
†No 620. Plain. Each, $2.85
†No. 620X. Gilt. " 3.85

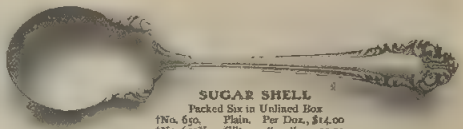


COLD MEAT FORK
Packed one in Lined Box
†No. 667. Plain Each, $1.75
†No. 667X. Gilt. " 2.45



LADLES
Packed one in Lined Box

†No. 715	Cream	Plain. Each,	$1.88
†No. 715X		Gilt. "	2.53
†No. 716	Bouillon	Plain. "	4.00
†No. 716X		Plain "	5.00
†No. 717	Gravy	Plain "	2.50
†No. 717X		Gilt "	3.50
†No. 719	Oyster	Plain "	5.12
†No. 719X		Gilt "	6.50
†No. 721	Soup Ind.	Plain. "	4.35
†No. 721X		Gilt "	5.35
†No. 721	Med. Soup	Plain. "	6.67
†No. 721X	" "	Gilt "	8.00
†No. 722	Punch	Plain "	8.35
†No. 722X		Gilt "	10.05
†No. 723	Large Soup	Plain "	7.34
†No. 723X	"	Gilt "	8.92



SUGAR SHELL
Packed Six in Unlined Box
†No. 650. Plain. Per Doz., $14.00
†No. 650X. Gilt. " " 19.00

BUTTER KNIFE
Packed Six in Unlined Box
†No. 695. Plain. Per Doz., $16.50
†No. 695X. Gilt. " " 21.50

Reproduction two-thirds size.

† Take Flatware Discount.

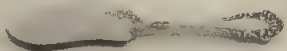
COMMUNITY SILVER

AVALON

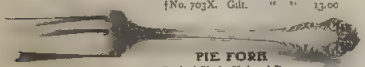
HOLLOW HANDLE ORANGE KNIFE
Packed Six in Lined Box
*No. 712 Per Set, $14.40

HOLLOW HANDLE FRUIT KNIFE
Packed Six in Lined Box
*No. 704 Per Set, $13.50

FLAT HANDLE INDIVIDUAL FISH KNIFE
Packed Six in Lined Box
†No. 703 Plain. Per Set, $ 9.00
†No. 703X. Gilt. " " 13.00



FLAT HANDLE BUTTER SPREADER
Packed Six in Lined Box
†No. 697. Plain. Per Set, $6.25
†No. 697X. Gilt. " " 8.25



PIE FORK
Packed Six in Unlined Box
†No. 660. Per Doz., $13.50

HOLLOW HANDLE BUTTER SPREADER
Packed Six in Lined Box
*No 707. Per Set, $13.50

PICKLE FORK
Packed One in Lined Box
†No. 682. Plain. Each, $ .92
†No. 682X. Gilt. " 1.35

SUGAR TONGS
Packed One in Lined Box
†No. 709. Each, $2.00

INDIVIDUAL SALAD FORK
Packed Six in Lined Box
†No 688. Plain. Per Set, $ 7.50
†No. 688X. Gilt. " " 10.00

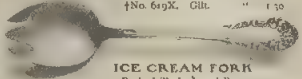
ORANGE SPOON
Packed Six in Lined Box
†No. 641. Plain. Per Set, $5 00
†No. 641X. Gilt " " 7.50

FOOD PUSHER
Packed One in Lined Box
†No. 619. Plain. Each, $ .96
†No. 619X. Gilt " 1.30

BERRY FORK
Packed Six in Lined Box
†No. 663. Plain. Per Set, $4.25
†No. 663X. Gilt. " " 6.25

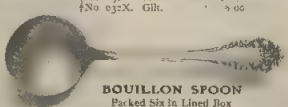
BABY SPOON
Packed One in Lined Box
†No. 619. Plain. Each, $ .96
†No. 619X. Gilt. " 1.30

OYSTER FORK
Packed Six in Lined Box
†No. 679. Plain. Per Set, $4 50
†No. 679X Gilt. " 7 40



ICE CREAM FORK
Packed Six in Lined Box
†No. 632 Plain. Per Set, $5 00
†No 632X. Gilt. " 9.00

SOUP SPOON
Packed Six in Unlined Box
No. 604. Per Doz., $15.00



BOUILLON SPOON
Packed Six in Lined Box
†No 622. Plain. Per Set, $6.50
†No 622X. Gilt. " " 9.00

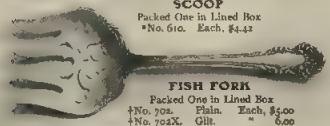
Reproduced from actual size.

† Take Flatware Discount. * Take Cutlery Discount.

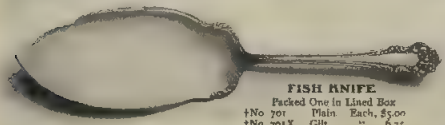
COMMUNITY SILVER

AVALON

HOLLOW HANDLE CHEESE SCOOP
Packed One in Lined Box
*No. 610. Each, $4.42

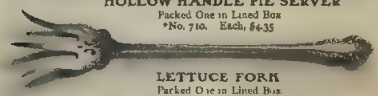


FISH FORK
Packed One in Lined Box
†No. 702. Plain. Each, $5.00
†No. 702X. Gilt. " 6.00

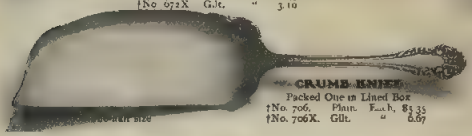


FISH KNIFE
Packed One in Lined Box
†No. 701. Plain. Each, $5.00
†No. 701X. Gilt. " 6.35

HOLLOW HANDLE PIE SERVER
Packed One in Lined Box
*No. 710. Each, $4.35



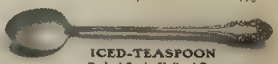
LETTUCE FORK
Packed One in Lined Box
†No. 672. Plain Each, $2.45
†No. 672X. Gilt. " 3.10



CRUMB KNIFE
Packed One in Lined Box
†No. 706. Plain. Each, $3.35
†No. 706X. Gilt. " 6.67

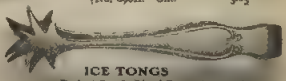
PRESERVE SPOON
Packed One in Lined Box
†No. 647. Plain. Each, $2.10
†No. 647X. Gilt. " 2.90

SERVING SALAD FORK
Packed One in Lined Box
†No. 687. Plain. Each, $3.75
†No. 687X. Gilt. " " 4.75



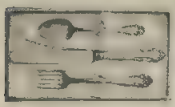
ICED-TEASPOON
Packed Six in Unlined Box
†No. 629. Plain. Per Doz., $10.50
†No. 629X. Gilt. " " 14.50

TOMATO SERVER
Packed One in Lined Box
†No. 690. Plain. Each, $2.65
†No. 690X. Gilt. " 3.65

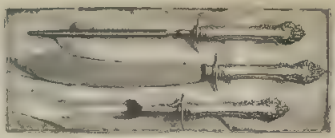


ICE TONGS
Packed One in Lined Box
†No. 705. Each, $6.67

FLAT HANDLE CHEESE SCOOP.
Packed One in Lined Box.
†No. 711. Each, $1.67



THREE PIECE CHILD SET
Packed One Set in Lined Box
†No. 735. Hollow Handle Knife. Per Set, $3.70
†No. 736. Solid Steel " " " 3.10
†No. 737. Flat Nickel " " " 2.60



LARGE CARVING SET
Packed One Set in Lined Box
*No. 725. Per Set, $20.00

SMALL CARVING SET
Packed One Set in Lined Box
*No. 728. Per Set, $9.20

* Take Cutlery Discount.
† Take Flatware Discount.

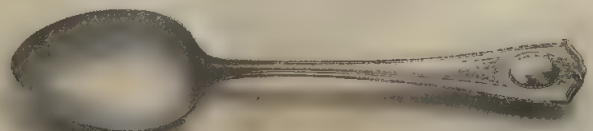
Reproduction one-fourth size.

COMMUNITY SILVER

LOUIS XVI.

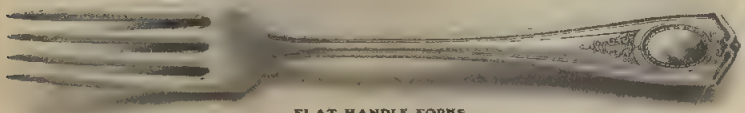
CARRY a strong line, if you want good sales. Community Silver has the heaviest plate and the most beautiful designs. It is the best advertised and the most satisfactory line of tableware to handle.

Shown below is our latest design in plated ware, the LOUIS XVI. In exquisite grace and delicacy of line, it harmonizes perfectly with the period which it represents - the later French Renaissance - while in rich simplicity it rivals the best examples of sterling silver.



SPOONS

†No. 8625.	After Dinner Coffee.	Packed Six in Lined Box.	Per Doz., $7 50
†No. 8625X	Gilt After Dinner Coffee.	" " "	" " 13 50
†No. 8001	Five O Clock Tea.	Packed Six in Unlined Box.	" " 7.50
†No. 8001X.	Gilt Five O'Clock Tea.	" " "	" " 11 50
†No. 8602.	Tea.	" " "	" " 7.50
†No. 8602X.	Gilt Tea.	" " "	" " 12.50
†No. 8603	Dessert.	" " "	" " 13.50
†No. 8605.	Table.	" " "	" " 15.00



FLAT HANDLE FORKS

†No. 8606.	Dessert.	Packed Six in Unlined Box.	Per Doz., $13.50
†No. 8607.	Medium.	" " "	" " 15.00
†No. 8608.	Child's.	" " "	" " 13.50

HOLLOW HANDLE KNIVES

*No. 8611.	Medium.	Packed Six in Flannel Roll.	Per Doz.	$30 00
*No. 8612.	Dessert,	" " " " " "	" "	29.00
*No. 8630.	Medium. Scimitar and Swaged.	" " " " " "	" "	30.75
*No. 8631.	Dessert " " "	" " " " " "	" "	29.75
*No. 8713.	Child's.	" " " Lined Box.	" "	27.00

HOLLOW HANDLE FORKS

*No. 7613.	Medium.	Packed Six in Flannel Roll	Per Doz.,	$30.00
*No. 7614.	Dessert.	" " " " " "	" "	29.00

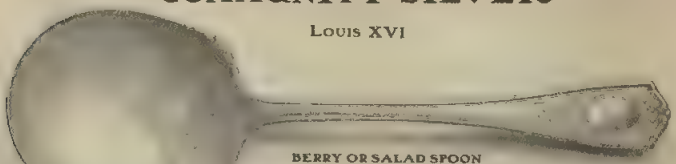
Reproduction five-sixths size.

* Take Cutlery Discount.

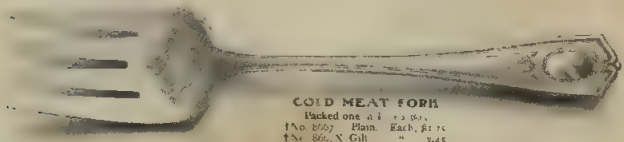
† Take Flatware Discount

COMMUNITY SILVER

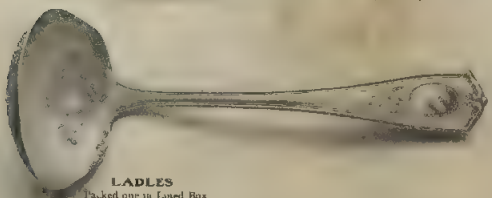
Louis XVI



BERRY OR SALAD SPOON
Packed One in Lined Box
†No. 8620 Plain. Each, $2.85
†No. 8620X Gilt. " 3.85

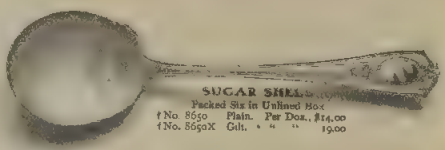


COLD MEAT FORK
Packed one [illegible]
†No. 8667 Plain. Each, $2.75
†No. 8667X Gilt. " 3.45



LADLES
Packed one in Lined Box

†No. 8715	Cream.	Plain.	Each,	$1.88
†No. 8715X	"	Gilt.	"	2.53
†No. 8717	Gravy	Plain.	"	2.50
†No. 8717X	"	Gilt.	"	3.50
†No. 8719	Oyster.	Plain.	"	5.42
†No. 8719X	"	Gilt	"	6.50
†No. 8721	Med. Soup.	Plain.	"	6.67
†No. 8721X	" "	Gilt	"	8.00



SUGAR SHELL
Packed Six in Unlined Box
†No. 8650 Plain. Per Doz., $14.00
†No. 8650X Gilt. " " " 19.00

BUTTER KNIFE
Packed Six in Unlined Box
†No. 8695 Plain. Per Doz., $16.50
†No. 8695X Gilt. " " 21.50

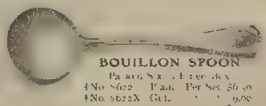
Reproduction two-thirds size.

† Take Flatware Discount.

COMMUNITY SILVER

Louis XVI

SOUP SPOON
Packed Six in Unlined Box
†No. 8604. Per Doz., $1.00

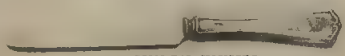


BOUILLON SPOON
Packed Six in Lined Box
†No. 8622. Plain. Per Set, $6.00
†No. 8622X. Gilt. [illegible] 9.00

HOLLOW HANDLE FRUIT KNIFE
Packed Six in Lined Box
*No. 8704. Per Set, $13.50

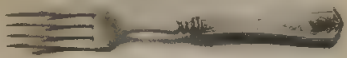
HOLLOW HANDLE BUTTER SPREADER
Packed Six in Lined Box
*No. 8707. Per Set, $13.50

HOLLOW HANDLE ORANGE KNIFE
Packed Six in Lined Box
*No. 8712. Per Set, $14.40



CHILD'S KNIVES
Packed Six in Lined Box
†No. 8713. Per Doz., $27.00

HOLLOW HANDLE CHEESE SCOOP
Packed One in Lined Box
*No. [illegible]



HOLLOW HANDLE MEDIUM FORK
[illegible]

HOLLOW HANDLE PIE SERVER
Packed One in Lined Box
*No. 8716. Each, $4.[illegible]

PICKLE FORK
Packed One in Lined Box
†No. 8682. Plain. Each, $ .92
†No. 8682X. Gilt. [illegible] 1.35

SMALL CARVING SET
[illegible]
*No. [illegible] Per Set, $.[illegible]

Reproduction one-half size.

† Take Flatware Discount.
* Take Cutlery Discount.

COMMUNITY SILVER

LOUIS XVI

COMPLETE PRICE LIST

SPOONS

			PER DOZ.
†No. 8625.	Coffee	Packed six in lined box,	$ 7 50
†No. 8625X.	Gilt Coffee		11 50
†No. 8601.	Five o'Clock Tea	Packed six in unlined box,	7 50
†No. 8601X.	Gilt Five o'clock Tea		11 50
†No. 8602.	Tea		7 50
†No. 8602X.	Gilt Tea		11 50
†No. 8603.	Dessert		13 50
†No. 8605.	Table		15 00
†No. 8604.	Soup		15 00
†No. 8650.	Sugar		14 00
†No. 8650X.	Gilt Sugar		19 00
			PER SET
†No. 8622.	Bouillon	Packed six in lined box,	6 50
†No. 8622X.	Gilt Bouillon		9 00
†No. 8641	Orange		5 00
†No. 8641X	Gilt Orange		7 50
			EACH
†No. 8620.	Berry or Salad	Packed one in lined box,	2 85
†No. 8620X.	Gilt Berry or Salad		3 85
†No. 8647.	Preserve		2 10
†No. 8647X.	Gilt Preserve		2 90

FLAT HANDLE FORKS

			PER DOZ.
†No. 8606.	Dessert	Packed six in unlined box,	$13 50
†No. 8607.	Medium		15 00
†No. 8608.	Child's		13 50
†No. 8660.	Pie		13 50
			EACH
†No. 8667.	Cold Meat	Packed one in lined box,	1 75
†No. 8667X.	Gilt Cold Meat		2 45
†No. 8672.	Lettuce		2 45
†No. 8672X.	Gilt Lettuce		3 10
†No. 8687.	Serving Salad		3 75
†No. 8687X.	Gilt Serving Salad		4 75
†No 8702.	Fish Serving		5 00
†No. 8702X.	Gilt Fish Serving		6 00
†No. 8682.	Pickle		92
†No. 8682X.	Gilt Pickle		1 35
			PER SET
†No. 8632.	Ice Cream	Packed six in lined box,	5 50
†No. 8632X.	Gilt Ice Cream		8 00
†No. 8679.	Oyster		4 90
†No. 8679X.	Gilt Oyster		7 40
†No. 8663.	Berry		4 25
†No. 8663X.	Gilt Berry		6 25
†No. 8688.	Ind. Salad		7 50
†No. 8688X.	Gilt Ind. Salad		10 00

CARVERS

			PER SET
†No. 8725.	Large, 3 pieces	Packed one set in lined box,	$20 00
*No. 8728.	Small, 2 pieces		9 20

FLAT HANDLE KNIVES

			EACH
†No. 8701	Fish Serving	Packed one in lined box,	$ 5 00
†No. 8701X.	Gilt Fish Serving		6 35
			PER SET
†No 8697	Butter Spreader	Packed six in lined box,	6 25
†No. 8697X.	Gilt Butter Spreader		8 25
			PER DOZ.
†No 8695	Butter	Packed six in unlined box,	16 50
†No. 8695X.	Gilt Butter		21 50

LADLES

			EACH
†No. 8715.	Cream	Packed one in lined box,	$ 1 88
†No. 8715X.	Gilt Cream		2 53
†No. 8717.	Gravy		2 50
†No. 8717X.	Gilt Gravy		3 50
†No. 8719.	Oyster		5 42
†No. 8719X.	Gilt Oyster		6 50
†No. 8721.	Medium Soup		6 67
†No. 8721X.	Gilt Medium Soup		8 60

THREE-PIECE CHILD'S SETS

			PER SET
†No. 8735.	Hollow Handle Knife	Packed one set in lined box,	$ 3 70
†No. 8737.	Flat Nickel Knife		2 60

TONGS

			EACH
†No. 8709.	Sugar	Packed one in lined box,	$ 2 00

HOLLOW HANDLE SCOOPS

			EACH
*No 8610.	Cheese	Packed one in lined box,	$ 4 42

HOLLOW HANDLE KNIVES

			PER DOZ
*No. 8611.	Medium	Packed six in flannel roll,	$30 00
*No. 8612.	Dessert		29 00
*No 8630.	Medium, Scimitar and Swaged		30 75
*No 8631	Dessert, Scimitar and Swaged		29 75
*No. 8713.	Child's	Packed six in lined box,	27 00
			PER SET
*No 87 2	Orange		14 40
*No. 8704.	Fruit		13 50
*No 8707.	Butter Spreader		13 50
			EACH
*No. 8706.	Ice Cream Server	Packed one in lined box,	4 35
*No. 8710.	Pie Server		4 35

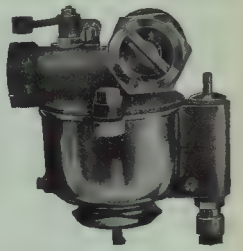
HOLLOW HANDLE FORKS

			PER DOZ.
*No. 8613.	Medium	Packed six in flannel roll,	$30 00
*No. 8614.	Dessert		29 00

†Take Flatware Discount
*Take Cutlery Discount

Buy carburetors designed especially for your automobile, not those made for all motor cars and suitable for none.

HOLLEY Carburetors



are used (in nearly every instance) by the manufacturers of the cars they are advertised to fit. Can our competitors make this assertion? Below will be found a list of carburetors especially designed to meet the requirements of the cars mentioned. Our latest special carburetors are one for the Orient Buckboard and one for motor cycles. Price, $11.00 each. We also have a heater attachment ready to be placed on Ford "F" cars. It will greatly increase the efficiency during cold weather. Price, $3.00.

FORM "A"

1902, '03 or '04 Oldsmobile Runabout	$12.00
1904 two cylinder Ford	11.00
Olds single cylinder Tonneau	11.50
Olds Touring Runabout	11.50

MODEL "E"

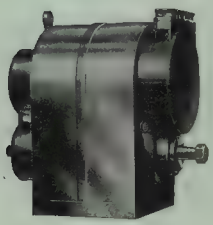
1905 Winton models B and C	$18.00
Single cylinder Cadillac	13.50
Orient Buckboard	11.00
Two cylinder Northern	14.00
" " Buick	14.00
Single cylinder 8 H. P. Crest	13.00
10 and 12 H. P. four cylinder Franklin	12.00
Two cylinder Queen Car	13.00
Single cylinder Northern	12.00

Circular "A" sent on request

HOLLEY BROS. CO. 668 BEAUBIEN ST. DETROIT, MICH.

HOLLEY
MAGNETO

HUFF SYSTEM



Is far superior
to any device manufactured in this Country or Europe. Its chief advantages are :

A single coil
with vibrator can be used in connection with both magneto and batteries.

A secondary
not being on the armature, does away absolutely with the liability of breaking down.

It will give a
longer and hotter spark than any machine made; ⅜" spark at 50 r. p. m., 50" at 900 r. p. m.

The system
is such, that it tends to build up the magnets. We guarantee them to be stronger after six months' use than when new.

Price of magneto,
coil and condenser is $135.00.

Circular "HM" sent on request

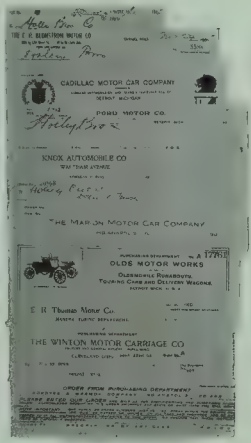
Holley Bros. Co.

668 Beaubien St., Detroit, Michigan

HOLLEY
CARBURETORS

are used by the largest automobile manufacturers in America. They tested all makes, that is why they use the Holley.

You can save the expense of experimenting by following the lead of the leaders.


CADILLAC MOTOR CAR COMPANY
FORD MOTOR CO.
KNOX AUTOMOBILE CO
THE MARION MOTOR CAR COMPANY
OLDS MOTOR WORKS
E R Thomas Motor Co.
THE WINTON MOTOR CARRIAGE CO

HOLLEY CARBURETORS

Will be used on the 1906 output of the following firms:

The Autocar Co., Ardmore, Pa.
Blomstrom Motor Co., Detroit, Mich.
Cadillac Motor Car Co. (four cylinder), Detroit, Mich.
Ford Motor Co., Detroit, Mich.
Knox Automobile Co. (four cylinder), Springfield, Mass.
Marion Motor Car Co., Indianapolis, Ind.
Mitchell Motor Car Co., Racine, Wis.
The Nordyke & Marmon Co., Indianapolis, Ind.
Olds Motor Works, Lansing, Mich.
E. R. Thomas Motor Co., Buffalo, N. Y.
Wayne Automobile Co., Detroit, Mich.
Winton Motor Carriage Co., Cleveland, O.
Welch Motor Car Co, Pontiac, Mich.

CIRCULAR "A" SENT ON REQUEST

Holley Bros. Co.
668 Beaubien St., Detroit, Michigan

Wanted, Hustlers

WE WANT AGENTS

in all parts of the country to push the sale of Holley Carburetors

We are looking especially for young men, who have had practical experience with carburetors and can visit the trade and also the consumer in their locality. Any honest man, with ordinary business ability and some practical experience with carburetors, can establish an excellent trade, by handling our carburetor with several other automobile specialties, which do not conflict. If you are the right man write us for further information and give us particulars.

Circular "A" sent on request.

HOLLEY BROS. CO. 668 BEAUBIEN ST. DETROIT, MICH.

Jackson

Model "D" 24 H. P. 2 Cylinder. $1500.00

This car is in many respects the counterpart of the famous Jackson Model "C", but is of costlier construction. The motor is of the same type, with 5¼ x 5 bore and stroke, but instead of lying horizontally under the body it is placed transversely across the frame, under the hood, providing readier accessibility. We retain the full efficiency of our motor in this model, and believe, therefore, that we have in this the most powerful shaft-drive, two-cylinder car on the American market. Every point is strong and mechanically as nearly perfect as it can be made and neither effort nor expense has been spared to make this the ideal car for those whose preference is for bevel gears and forward motors. The finish and equipment (gas lamps, etc.) is first-class throughout.

Jackson Automobile Co.

Jackson, Michigan

Jackson

Some Jackson "Winnings" For 1905

SECOND in non-stop run from Chicago to St. Paul. The car first in was a $4000.00 machine.

FIRST in race at St. Paul for cars that participated in the Chicago-St. Paul non-stop run.

FIRST in race at Detroit for $1500.00 cars and under; time for five miles, 7.31.

FIRST in run to Port Huron; 156 miles of bad roads negotiated in seven hours.

FIRST in race at Newark, N. J. for cars of 24 H. P. and under; five miles in 7.52.

FIRST at Grand Rapids in five-mile race for $1500.00 cars and under; time, 7.10.

FIRST at Grand Rapids in five-mile race for championship of Western Michigan; time, 7.28.

WORLD'S RECORD—And at Grand Rapids—1905, as a fitting close to the season, a stock Jackson Car that had done over 4000 miles service on the road didn't do a thing but smash the world's five-mile record for two-cylinder cars, reducing it from 6:19⅘ to 6:18⅕.

And yet the Jackson is not designed or constructed for racing, but just to meet every-day conditions—"No sand too deep, No hill too steep." That's where these winnings are significant.

Jackson Automobile Co.

Jackson, Michigan

Jackson

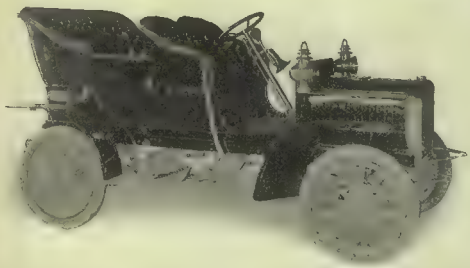
Model "G". 40 H. P. 4 Cylinder. $2500.00

This is the much-talked-about 1906 four-cylinder "Jackson" car that develops irresistible power and sells for only $2500.00; massive 34" artillery wheels with 4" tires; 108" wheel base; handsome, commodious body, seating five persons comfortably; bevel gear drive; sliding gear transmission, three speeds forward, and reverse; machine elegantly finished and upholstered, and regularly furnished with a splendid pair of gas lamps and generator, in addition to the usual equipment of automobiles. It gives every promise of being the sensation of 1906.

Jackson Automobile Co.

Jackson, Michigan

Jackson



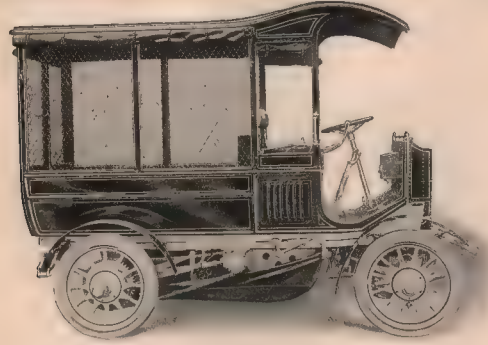
Model "C". 24 H. P. 2 Cylinder. $1250.00

This car made so splendid a reputation for itself in 1905 and is so generally well known, that little needs to be said regarding it, except that its manufacture will be continued, substantially without change. Only a few minor improvements have been made in its construction. It is a handsome touring car with plenty of power and endurance. carries five persons comfortably, and can always be relied on to get there on time. It proved so good a seller that our agents strenuously objected to any thought of abandoning it, and we readily agreed with them. It probably hasn't an equal, in automobile value, anywhere near the price of $1250.00.

Jackson Automobile Co.

Jackson, Michigan

Oldsmobile



DELIVERY CAR

SPECIFICATIONS

Price, $2350.
Body, Wood, delivery, built to order.
Color, Optional.
Total weight, 3,000 lbs.
Wheel base, 110".
Wheel tread, 56".
Tire dimensions, front, 34" x 4" solid.
Tire dimensions, rear, 34" x 4" solid.
Steering, Wheel.
Brakes, Transmission controlled by pedal, internal hub by hand lever.
Gasoline capacity, 12 gallons.
Frames, Pressed steel.

Horse power, 16.
Number of cylinders, 2.
Cylinders arranged, Vertical under seat
Cooling, Water circulated by gear pump through radiator on front of dash.
Ignition, Jump spark, dry cells and storage battery.
Drive, Double side chain.
Transmission, Planetary, mounted on counter shaft.
Speeds, Two forward and one reverse.
Style of top, Built to order.

FOR FURTHER DETAILS ADDRESS

Olds Motor Works, Lansing, Mich., U. S. A.

Member Association of Licensed Automobile Manufacturers.

Read and Let These Facts Soak In

CUT COUPON HERE

CATALOGUE COUPON

OLDS MOTOR WORKS

LANSING, MICH.

Kindly send me information regarding cars checked. I am interested.

Model B ..... Delivery Cars .. ..
Model S..... Passenger
N2 Medel L..... Traffic Cars .. ..

Name

Address .. ...

CUT COUPON HERE

CALENDAR COUPON

OLDS MOTOR WORKS

LANSING, MICH.

Enclosed find 10 cents, for which send your Art Calendar (free from advertising and suitable for framing) for 1908. Design by George Gibbs. N2

Name

Address

CUT COUPON HERE

MOTOR TALK COUPON

OLDS MOTOR WORKS

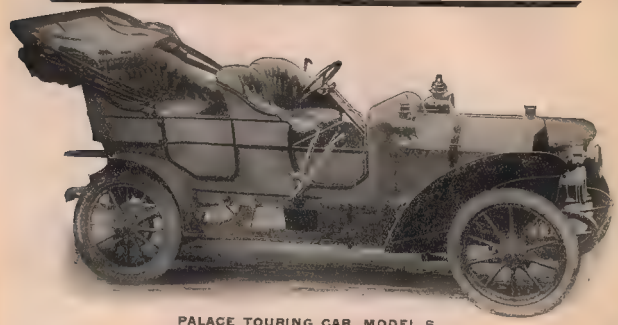
LANSING, MICH.

Enclosed find 25 cents, for which have MOTOR TALK, a magazine devoted to automobiling, sent to me for 1 year. N2

Name

Address

Oldsmobile



PALACE TOURING CAR, MODEL S

SPECIFICATIONS

Price, $2,250.
Body, Wood. Side door in both front and rear seats.
Color, Grey with black trimmings.
Seating capacity, Five persons.
Total weight, 2300 lbs.
Wheel base, 106".
Wheel tread, 55".
Tire dimensions, front, 32" x 3½".
Tire dimensions, rear, 32" x 4".
Steering, Wheel, irreversible. Worm and nut device.
Brakes, Two; cardon shaft operated by pedal: rear hub operated by lever.
Gasoline capacity, 15 gallons.
Frame, Pressed steel; channel section.
Horse power, 26-28.
Number of cylinders, Four.
Cylinders arranged, Vertically under hood.
Cooling, Gear pump circulating water through flat tube radiator.
Ignition, Jump spark with dry cell and storage cell.
Drive, Bevel gear direct.
Transmission, Sliding gear—one lever—selective control.
Speed, Three forward and one reverse.
Style of top, Canopy or extension top furnished on special order.

For further details address

Olds Motor Works, Lansing, Mich., U.S.A.

Member Association of Licensed Automobile Manufacturers.

Oldsmobile

STANDARD RUNABOUT, MODEL 8

SPECIFICATIONS

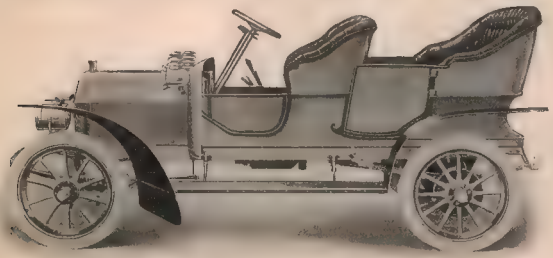
Price, $650.
Model, Curved dash or straight dash.
Body, Wood
Color, Black with red trimmings.
Seating capacity, Two passengers.
Total weight, 1,100 lbs.
Wheel base, 66".
Wheel tread, 55".
Tire dimensions, front, 28" x 3".
Tire dimensions, rear, 28" x 3".
Steering, Tiller.
Brakes, Transmission and rear hub, operated by pedal.
Gasoline capacity, 5 gallons.
Frame, Angle steel.
Horse power, Seven.
Number of cylinders, One.
Cylinder arranged, Horizontal under body.
Cooling, Water circulated by gear pump through copper disk radiator.
Ignition, Jump spark, dry cells.
Drive, Chain.
Transmission, Planetary.
Speeds, Two forward and one reverse.
Style of top, Carriage.

For further details address

Olds Motor Works, Lansing, Mich., U.S.A.

Member Association of Licensed Automobile Manufacturers.

Oldsmobile



THE TWO CYCLE, MODEL L

SPECIFICATIONS

Price, $1250.
Body, Wood: removable rear seats, with beetle baggage compartment.
Color, Grey, with black trimmings.
Seating capacity, Four persons.
Total weight, 2000 lbs.
Wheel base, 102".
Wheel tread, 55".
Tire dimensions, front, 30" x 3½".
Tire dimensions, rear, 30" x 3½.
Steering, Wheel; irreversible; worm and nut type.
Brakes, Two; cardon shaft operated by pedal; rear hub operated by lever.
Gasoline capacity, 15 gallons.
Frame, pressed steel; channel sections.
Horse power, 20-24; 2-stroke cycle motor.
Number of cylinders, Two.
Cylinders arranged, Vertically under hood.
Cooling, Gear pump circulating water through flat tube radiator.
Ignition, Jump spark with dry cell and storage cell.
Drive, Bevel gear, direct.
Transmission, Sliding gear, one lever, selective control.
Speeds, Three forward, one reverse.
Style of top, Canopy of extension top furnished on special order.

For further details address

Olds Motor Works, Lansing, Mich., U.S.A.

Member Association of Licensed Automobile Manufacturers.

WAGONS.

K. K. Overland Coaster.

Showing Wagon with Box

Showing Wagon Converted into a Coaster Bob.

Showing Wagon with Box removed.

Steel Gear, channel Steel Arch construction; Front and Rear Axles strongly Braced; Axles, ½ inch Round Steel. Malleable Iron Hounds, Strong Malleable Fifth Wheel, Heavy Wheels with Heavy Iron Hubs. Malleable Iron Bolsters and Tire, and ⅞ inch Angle Steel Spokes, White Ash Body and Bottom, with removable Sable or Type Express Box. Round Hard Maple Handle, has perfect Steering mechanism which operates equally well with Express Box on or off, can be used as a Box Wagon, as a Coaster Wagon or as a Coaster Bob. Nos. 1A, 2A, 3A and 5A equipped with Hand Brake. No. 4A equipped with combination Foot and Hand Brake. Natural Wood Finish Varnished, with Red Trimmings. Coaster Bob Runners are not included with Wagons.

Nos.	1A	2A	3A	4A	5A
Size of Bottom, Inches	14½ x 36	14¼ x 36	16¼ x 40	16¼ x 40	18¼ x 44
Diameter of Wheels, inches	8	11	11	11	11
Weight per dozen, about, lbs.	396	468	468	516	592
Per dozen	$56.00	72.00	80.00	88.00	88.00

SLED RUNNERS.

Sled Runners for the K. K. Overland Coaster Wagons are made of Round Back Angle Steel which gives them great speed. The Front and Rear Runners oscillate thereby going over uneven ground smoothly. The Knees are constructed according to the bridge truss principle which makes them very strong.

	PER DOZEN SETS
Sled Runners; Painted Red, Artistically Striped	$24 00

One-sixth Dozen in a Crate; Knocked Down.

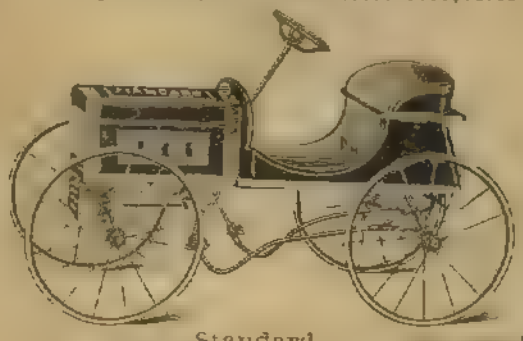
AUTOMOBILE WAGONS.

Columbia. PER DOZEN

No. 402R—Size of Body, 15x36 inches; Sheet Steel Body, Painted Red Outside and Green Inside; nicely Stenciled and Striped; Steel Axles; Wrought Steel Gearing; Back Japanned; Rubber Tired Wheels, 12 and 18 inch; Weight, per Crate, about 45 lbs.....$84.00

Maple. PER DOZEN

No. 401R—Size of Body, 14x34 inches; Sheet Steel Body, Painted Red Outside and Green Inside; Nicely Striped and Decorated; Steel Axles; Wrought Steel Gearing, Japanned In Green; Wheels Nicely Tinned and Rubber Tired. 12 and 18 inch; Weight, per Crate, about 35 lbs $96.00



Standard. PER DOZEN

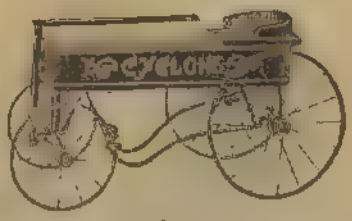
No. 403R—Size of Body, 15x40 inches, Body Finished in Red; Nicely Striped with Olive Green; Polished Brass Trimmings; 18 inch Front and Rear Wheels, Green Enameled, with Rubber Tires; Wrought Steel Gears, Enameled In Green; Weight, per Crate, about 55 lbs $138.00

Tandem. PER DOZEN

No. 404R—Size of Body, 16x45 inches; Body Finished in Red, with Gold Bronze Striping; Wood Seats, Upholstered in Green Corduroy; Wrought Steel Gears, Enameled Green; Chain and Sprocket Drive; Best Quality High Grade Bicycle Chain, with Bicycle Sprockets; Crank Axle is Mounted on Heavy Steel Frame; High Grade Genuine Ball Bearing Crank Axle; Side Steps; Apron and License Tag; 12 and 18 inch Wheels, Enameled Green, with Rubber Tires; Weight, per Crate, about 72 lbs.....$216.00

One-twelfth Dozen in a Crate.

WAGONS.



Cyclone. PER DOZEN

No. 33—Combined Wagon and Velocipede. Size of Body 14x32 inches, **Painted and Lettered; Wheels, 12 and 18 inch; Steel Wheels; Front Wheels turn under; Sheet Steel Body, Malleable Gearing; suitable for children from 3 to 12 years of age; Weight, per Dozen, about 348 lbs.....$96.00**

No. 33, One-quarter Dozen in a Crate

Police Patrol. PER DOZEN

No. 1P—Size of Bed 20½x37x8½ inches. Bed and Seat made of Sheet Steel, Painted and Lettered. **Steel Axles; all Iron Parts are Malleable; Tinned; Cushion Seats; Brass Gong; Brass Rails and Tinned Knobs; Steel Wheels, 14 and 20 inch; Weight, Each, Crated, about 95 lbs.....$15.00**

No. 2P—**Same as No. 1P except size of Bed, 15x30x7¼ inches; Wheels, 12 and 18 inch; Weight, Each, Crated, about 56 lbs.....108.00**

Nos. 1P and 2P, One-fourth Dozen in a Crate

BABY WALKERS

PER DOZEN

No. 1—**Glascock's Baby Walker and Tender Combined:** Cherry Finished, Hard Maple Bent Seat and Tray, Top and Bottom Rims connected by four Coiled Steel Wire Springs, which act as a Cushion; Lower Rim has four Ball Bearing Casters making the Walker easy to push; Adjustable Bow holds in position by means of three Russett Leather Straps which fasten to the Top Rim. By the use of this "Walker," the Baby not only learns how to walk, but is given an opportunity to become strong and healthy by taking exercise, without danger of getting injured. Top Rim, 18 inches in Diameter; Bottom Rim, 27 inches in Diameter, Tray, 4 inches in Diameter, Weight, per Dozen, about 75 lbs. $48.00

One-quarter Dozen in a Crate.

HAND CARS.

For Pleasure and Exercise.

Cut shows No. 300.

Cut shows No. 300L.

PER DOZEN

No. 300—**"Irish Mail"** made entirely of Wood, Steel and Malleable Iron; Wood parts are made of selected Oak, the Reaches or long parallel Bars and Handle are painted with three coats of Red Paint; Seat is painted with three coats of Green Paint; the whole machine is neatly Stenciled and Transferred with attractive designs; Running Gear is finished in Jet Black; Wheels have extra heavy Spokes and Hubs and are **Rubber Tired;** front Wheels 8 inches in Diameter with twelve Spokes; the rear Wheels 12 inches in Diameter with Sixteen Spokes, nicely Tinned. This machine will easily sustain a weight of 400 lbs., and is suitable for children from 3 to 15 years old, Length, 48 inches, Width, 20 inches; Height, 28 inches..... $72 00

One in a Crate; Weight, per Crate, about 35 lbs.

PER DOZEN

No. 300L—**Detachable Levers** which can be attached to the rear of No. 300 Car, so that two children can operate the machine at the same time..... $24.00

Loose; Weight, Each, about 4 lbs.

PER DOZEN

No. 310—**"Flying Dutchman"** is made of same kind of materials as No. 300 and same general construction, except Wood parts finished entirely in Red and built on larger lines, is built for two riders, and has two Seats and two Levers. This machine is suitable for children from 5 to 15 years old, Length, 57 inches, Width, 20 inches; Height, 28 inches..... $108.00

One in a Crate, Weight, per Crate, about 45 lbs.

SOLAR

Our
1906 Gas Generator

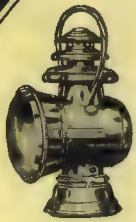
Is made of stamped Seamless Shells

Water or Gas Leaks are Impossible

Better than the 1905 Which was Best Made

LAMPS

SOLAR "SH THE



It pays to equip your cars with Solar Lamps —we see to it that the buyer knows of Solar supremacy. It's the one lamp and generator that's sure to satisfy—the one lamp that's sold on a guarantee that means something. Made by the World's biggest, most

...SEE US AT

Badger Brass Mfg. Co., Factory Kenosha, Wis.

OW WAY" LAMPS

modern manufactory of acetylene and oil auto head lights, side and tail lights, cycle and motor boat lamps. The 1906 Solars are ready now for your inspection. Stick to the Solar—patents, plant and policy miles ahead of blatant but imitative rivalry. .· .. .·. .·

THE SHOWS...

Eastern Branch, 11 Warren St., New York

SOLAR

For 1906
Smart-Set Styles

Most Makers Equip Them

'Cause They Are The Best

Speak For Themselves

LAMPS

The Glide

Model E, Glide Touring Car

Price, $3,000, f. o. b. factory, Peoria, Ill.

SPECIFICATIONS

BODY—Double side entrance tonneau, with individual front seats.
COLOR—Automobile gray or royal blue; gray and cream running gear.
WHEEL BASE—103 inches.
WHEEL TREAD—Standard.
WHEELS—32 inches, wood, artillery type.
TIRES—32x4 inches. FRAME—Pressed steel
MOTOR—Vertical four-cylinder, in front under hood. 4½x5 individual cylinders.
HORSE POWER—35.
GASOLINE CAPACITY—18 gallons
COOLING—Water, cellular radiator with fan.
IGNITION—Jump spark, storage or dry cell batteries.
DRIVE—Bevel gear on rear axle.
TRANSMISSION—Planetary in oil.
STEERING GEAR—Irreversible SPEEDS—Two forward, one reverse, more if required
LUBRICATION—Positive feed lubricator BRAKES—Emergency on rear wheel hubs, baiting on transmission gear. EQUIPMENT—2 oil lamps, horn and complete tool kit.

Glide light touring car. Wheel base 80 ins., gauge 54 ins., wheels 30x3 ins., and 30x3½, motor 4x5 pair of opposed cylinders, 4-cycle water-cooled. Body, side entrance tonneau; dome swinging to rear, seats 5 passengers. Weight 1350 lbs. Price $1250.

Glide, 1905, runabout wheel base 79 ins., gauge 54 ins., wheels 28x3 ins., motor 4½x5 vertical cylinder, 4x5 ins., 4-cycle water-cooled. Individual front seats for two passengers, and is also fitted with a detachable tonneau, with seats for two passengers additional. Weight of runabout 1100 lbs, price $900, with tonneau, $900.

Manufactured by

THE BARTHOLOMEW CO.

PEORIA, ILL.

The Glide

The New Addition to the Glide Factory. Now in Full Operation. Fully Equipped—Well Arranged. A Model Plant for the Production of these Popular Cars. The North Building

Lest you doubt our facilities, we call your attention to the fact that our equipment is most modern and complete for making every part of an automobile. We consider it poor policy to over-sell. If you do not contract on time, we decline orders. Give us an early contract, and we will deliver the goods to you on time. An agency without something to sell is unprofitable. Our guarantee will protect you against a loss of this kind. Our facilities are unexcelled. Our factory is well lighted, is equipped with modern appliances, and we are turning out cars made of the best material and design, and known everywhere to be reliable. Economy, comfort, style and elegance combine to make Glides popular automobiles, with discriminating buyers.

If you afford us an opportunity of demonstrating what we offer, we can show you a thoroughly up-to-date line of automobiles, that are built for hard usage and will work well every day in the year. Our motto is "Maximum service, minimum cost of maintenance."

The South Building, or Original Part of the Glide Factory. Now Equipped with Most Modern Machinery—Each Department a Model in Every Detail. The Finest Factory in the West.

Manufactured by

THE BARTHOLOMEW CO.

PEORIA, ILL.

The Glide

AUTOMOBILE DEALERS

What most of your customers want are either single cylinder runabouts, double opposed motor, medium size touring car, or a four-cylinder large touring car at a moderate price. Our line places you in position to meet all comers, and it is not necessary for you to handle other makes to meet the public demand. It is far more satisfactory and profitable to push one line than to try to talk up the merits of several different makes. It is better to deal with one factory, because your shipments can be bunched into carload lots, reducing freight or express charges. By giving us a contract covering your requirements, we can deliver you the goods as promised. We have wide experience as manufacturers, and have been in the automobile industry for four years. Our different models are perfected and have been thoroughly tested, and they are in position to serve you and your customers faithfully and well.

Don't experiment with new lines. The Glide is a sure thing, and you can back it with your money and reputation, and fear neither competition nor customers. We solicit your correspondence, as we are anxious to give you full details.

Manufactured by
THE BARTHOLOMEW CO.
PEORIA, ILL.

The Glide

Three Glide Models for 1906

Model C Glideabout, single cylinder, 8-11 H. P.,	$ 800.00
Model F Glide, 16-18 H. P., double opposed,	1250.00
Model E Glide, 30-35 H. P., four cylinder,	3000.00

All swift, smooth, good-running cars that travel everywhere.
Catch the Glide idea.
To Glide, not simply ride, is the 1906 way to go.

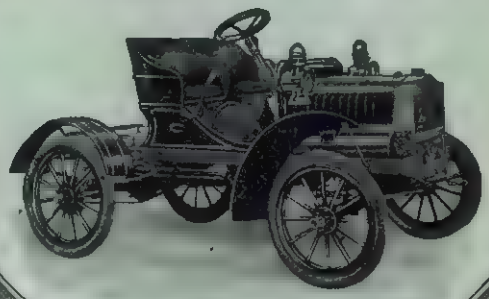
Moving off from a standstill so smooth and easy you hardly know you are going until you reach full speed. Running smoothly and silently without jar and slowing down until you hardly know when you stop; that is gliding. It makes the Glide much talked about and salable everywhere. It is free from freaks and has no untried notions. The basis of its success is that it goes over the road and gives satisfaction.

Our representatives are out, and will call upon you if you desire to see them. We also extend to you an invitation to visit our factory, or call to see us at the New York Automobile Show, 69th Regiment Armory, January 13-20. Main floor space, A-4. Or at the Chicago Show in the Coliseum, spaces 91 and 92. Agencies are being closed daily, but we have a few more good ones open for live, hustling and responsible dealers. Better write to-day, and have us reserve territory for you until we can get together. Our proposition means a good line, prompt shipment, right prices, liberal commission, good territory, and a great demand for Glides.

Member American Motor Car Manufacturers' Association.

Manufactured by
THE BARTHOLOMEW CO.
PEORIA, ILL.

The "Maxwell"



10 H. P. Speedster
$800

"Perfectly Simple—Simply Perfect"

Maxwells stand second in number of cars sold during the past year. No more COULD be sold because no more could be made.

Send for catalogue and book of "Facts and Testimony," which contains letters from 32 owners who enjoy telling what they know of the "Maxwell."

Maxwell-Briscoe Motor Co.

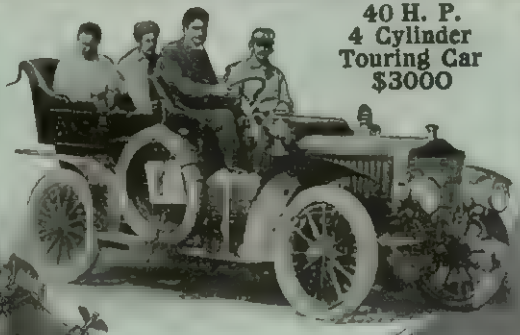
Member American Motor Car Manufacturers' Association.

CHICAGO, ILL. FACTORIES PAWTUCKET, R. I.

Main Plant: TARRYTOWN, N. Y.

Maxwell Briscoe, Inc.,	New York, N. Y.	Maxwell-Briscoe-McLeod Co.	Detroit, Mich.
Maxwell Briscoe-Chase Co.	Chicago, Ill.	Maxwell Garage	Brooklyn, N. Y.
Fisher Automobile Co.	Indianapolis, Ind.	J. W. Wilcox & Son	Los Angeles, Cal.
Maxwell Briscoe-Boston Co.	Boston, Mass.	Richard Irvin & Co.	New York City

The "Maxwell"



WON

The Deming Trophy in the Glidden Tour

A VICTORY

that was coincident with its first appearance in public. This latest product of the Maxwell doctrine will prove to be next season's sensation. Look for it at the "big show" in December or send to us now for particulars.

The "Maxwell"

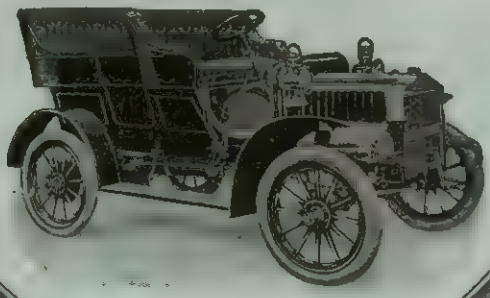
10 H. P. Tourabout
$780

"Perfectly Simple—Simply Perfect"

4 Cars—1 Doctrine
1 Result—Satisfaction

Just talk to "a man with a Maxwell" and get the "sunny side" of the automobile question. Maxwell owners are Maxwell enthusiasts because theirs is the "car of contentment."

The "Maxwell"



20 H. P. Touring Car
$1450

"Perfectly Simple—Simply Perfect"

THIS IS THE Maxwell Doctrine

Entire power plant—engine, transmission and MULTIPLE DISC CLUTCH—in one UNIT and suspended on THREE points. For American roads, this is the only system of automobile construction that CAN produce complete satisfaction.

The Thomas "Flyer"

"Every car guaranteed to contain all the essential features of construction and workmanship of the best foreign cars."

¶ The Thomas "Flyer" has long been noted for its hill climbing ability. The steepest grades, those that prove terrors for other cars, are taken by it without stress. This is evidenced by the fact that a stock car containing five people recently ascended a 14 per cent. grade at the rate of forty-five miles an hour, as was attested to by them in an affidavit.

¶ In the Thomas "Flyer" America at last has a car that speeds at the rate of sixty miles an hour, fully equipped.

¶ In point of reliability the "Flyer" is unsurpassable. The unequalled workmanship and the choice of materials of the best grade without an eye to expense has brought this about.

¶ The Thomas "Flyer" comfortably seats seven people, two on the front seat, three in the rear seat of the tonneau, and two on revolving collapsible seats in the tonneau. The two collapsible seats are of such construction that they may be folded and placed in a locker in less than a minute.

¶ Owing to the lines of its construction the Thomas "Flyer" has earned the name of the Dust Proof Automobile. All road dirt is deflected, thereby removing one of the greatest annoyances, not alone of tourists but of those who confine their riding to the city streets.

¶ Every ounce of power possible in automobile construction is delivered to the rear wheels. This is accomplished through the fact that more and more expensive anti-friction bearings are used on the Thomas "Flyer" than on any other car and that the double chain drive is used. Especial attention has been paid to the chain pull. On the sprockets this comes directly over a Hess-Bright ball bearing and on the rear wheels between the Hess-Bright bearings.

The Thomas "Flyer"

FIFTY HORSEPOWER, $3,500

A FOREWORD

¶ Starting as a pioneer in the automobile manufacturing world the entire force of employees of the E. R. Thomas Motor Company has striven in and out of season with but one resolve before it—to make not the best automobile in America—to make the best automobile in the world.

¶ The demand grew for a high powered touring car as the years went on and automobiles became better understood.

¶ The E. R. Thomas Motor Company was ready to meet this demand. It had been anticipated. The fifty horsepower Thomas "Flyer" had already been launched and the public's choice given to it before that public had found its feet and had decided just what to want.

The Thomas "Flyer"

¶ Thomas "Flyers" have been the most successful Automobiles in use in America. No detail of construction has been overlooked and the present "Flyer" is the result of years of experiment, study and designing by a corps of high salaried and successful experts.

¶ Every Thomas user is a friend of his car. One man says, "I know now, after having used my car an entire season, why some engineers will insist that their locomobiles have almost *human* understanding."

¶ So great has the demand for "Flyers" been that The E. R. Thomas Motor Company found it necessary to construct a new plant—a model of its kind. It is of solid concrete, and with its recent completion cost of operation has been reduced to a *minimum*, a fact through which purchasers are enabled to buy the leading car at a comparatively small cost.

The Thomas "Flyer" is made by

The E. R. Thomas Motor Co.

1190-1200 Niagara St., Buffalo, N. Y.

Member of the Licensed Association of Automobile Manufacturers

The Thomas "Flyer"

"Every stock car guaranteed to show a rate of sixty miles an hour before leaving the factory"

¶ In the Thomas "Flyer" is the most expensive and best transmission placed in an automobile. Four speeds forward and one reverse are its changes. This transmission is of the selective type and the shift may be made from low to high or from high to low without passage through the intermediate gears. The interlocking system absolutely prevents stripping.

¶ The clutch is of the triple metallic disc pattern, the outer discs being of the best grade of manganese bronze and the inner, or driving member, of the best grade of grey iron. The bronze plate is fitted with cork cushions which insure against a jarring, machinery destroying start when the clutch is engaged.

¶ The motor is four cylinder, vertical of fifty horsepower. The valves, on opposite sides of the motor are mechanical and interchangeable.

¶ Fifteen Hess-Bright ball bearings and one roller bearing allow the delivery of the maximum of power to the wheels.

¶ The drive is by double chains, the only method suitable for high powered cars, as shown by experiments and road usage since the construction of automobiles began to reach its present high standard.

¶ The frame is of the best cold pressed steel narrowed at the front and strengthened to a point that prevents breakage or buckling. The frame gives a wheel base of 118 inches and enables the car to be turned in a very narrow radius.

¶ The Thomas ratchet and pawl safety device has prevented more accidents than any other single device ever placed on a car with the exception of brakes. It absolutely prevents a car backing down hill and can be applied without the least loss of power while the car is going at any speed.

¶ The radiator capacity has been increased and is assisted in its function by a fan driven by a chain adjustable to stretch.

Walker Runabout

Model B

Price, $550.00. After April 1, $600.00

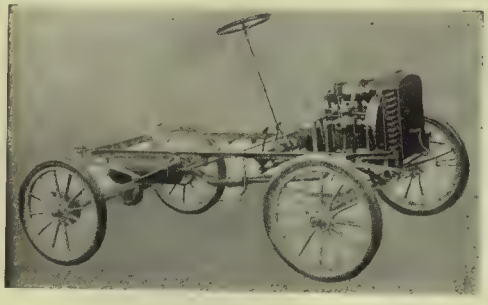
We invite you to inspect our Runabout for the season of 1906.

Walker Motor Car Co.

Detroit, Michigan

Write at once for agency terms.

Walker Runabout



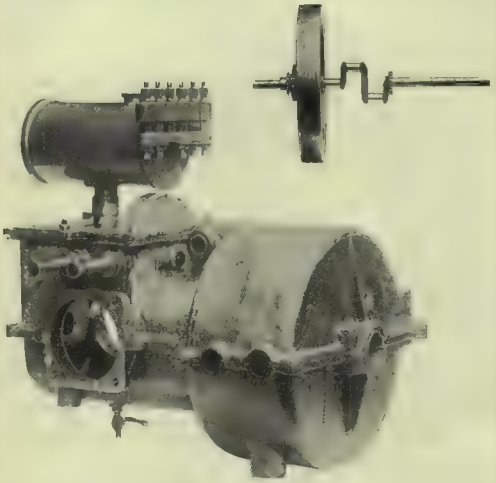
Model B Chassis

Walker Motor Car Co.

Detroit, Michigan

Live Agents Wanted

Walker Runabout

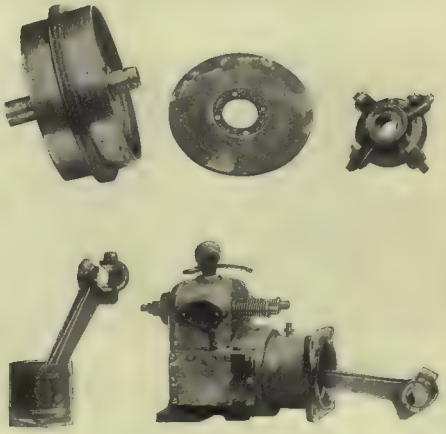


Parts of our Model B

Walker Motor Car Co.

Detroit, Michigan

Walker Runabout



Parts of our Model B

Walker Motor Car Co.

Detroit, Michigan

The Winton 1907 Model M

The Winton Motor Carriage Co., Cleveland, Ohio, offer two models for 1907—Model M, 40 H. P., 4-cylinder, at $3500.00, and Model XIV at $2500.00. The Model M is described herewith and the Model XIV will be described later

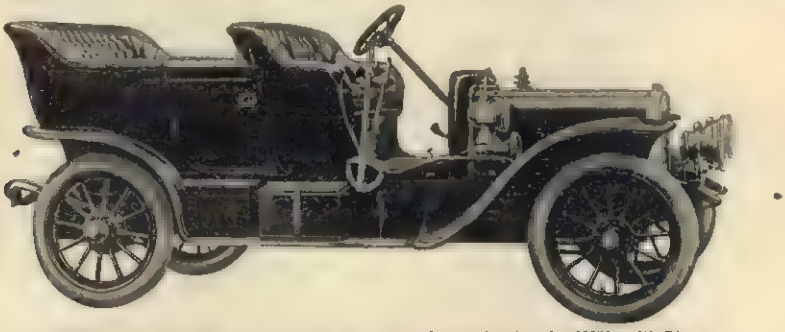
MODEL M. ENGINE.

The four cylinders of the Winton Model M engine are 5 in. stroke and 5 in. bore.

The cylinders are cast in pairs and have the valves placed all on one side of the motor and operated by a single cam shaft (M22). All valves are mechanically operated. The pistons are extremely long in proportion to the bore, which prevents cocking. The cylinders are offset from the centre line of the crank shaft for the purpose of equalizing the piston thrust and wear on the cylinders, and also so that the impulse on the piston will act more directly on the crank pin. The inlet valves of each cylinder pair are placed in the centre, and the exhaust valves on the ends. But one spring is used to operate the inlet and exhaust valve of each cylinder. This is accomplished by means of an extremely simple mechanism. In the end of each valve stem is placed a pin, a yoke (M10) fits over the pins of the inlet and exhaust valves for each cylinder. This yoke has a projecting lip at the opposite ends of each pin, to prevent the pin from slipping out. In the centre of the yoke is placed a trunion ring (M95), and in this trunion ring is a steel thimble which carries the spring pressure. Screwed into the cylinder and passing inside of the spring is a steel pin (M85), which serves the purpose of maintaining the alignment of the spring. This makes an extremely interesting and simple valve operating mechanism, and serves its purpose admirably, inasmuch as the exhaust and inlet valves are never open at the same time so that the pressure is never required on both at once.

The cam shaft and its bearings, from one end to the other, form a unit, inasmuch as the spaces between the bearings are taken up by the cams, excepting in the center where we find (M52) the bevel pinion for operating the circuit breaker, and in this case a collar (M151) and the gear on the cam shaft are pinned to the cam shaft to complete the assemblage. The cam shaft bearings are larger in diameter than the cams, so that to withdraw the cam shaft it is only necessary to loosen the pin holding the bearings in their places and withdraw the cams through the hole in which the bushings fit. They are withdrawn through the forward end of the motor. The usual construction of plunger and roller are used to communicate the cam motion to the valve. At the upper end of the plunger is an adjustable, hardened nut, which allows the adjustment of the valve timing. Inside of the plunger guide is placed a spring for the purpose of keeping the roller always on the cam. The cam shaft center is offset from the line of the valves to reduce the thrust on the plunger guides for the same reason that the cylinders are offset from the crank shaft. The cam shaft is carried in a separate case and is lubricated from the throw of the connecting rods. The plunger guides (M16) of each cylinder are held down by a yoke which itself is clamped by an arm (M20) by means of a nut placed over it. The removal of this one nut permits of the removal of the plunger, the guide, the roller, and all of these parts for one cylinder, and this can be done without disturbing the valves, the springs, or their parts. It will also be noticed that by removing the pin in the end of each valve stem the valve can be removed through the plug that is placed over it, the yoke (M10) then dropping down onto the nut (M13) on the plunger. Notice, this does not disturb the plungers or parts, nor does it require the removal of the spring, and is an exceedingly simple operation to perform. At the forward end of the case are housed the gears which drive the cam shaft, idlers, water pump, air pump, and the fan.

The idler for the cam shaft and for the fan are mounted on annular ball bearings.

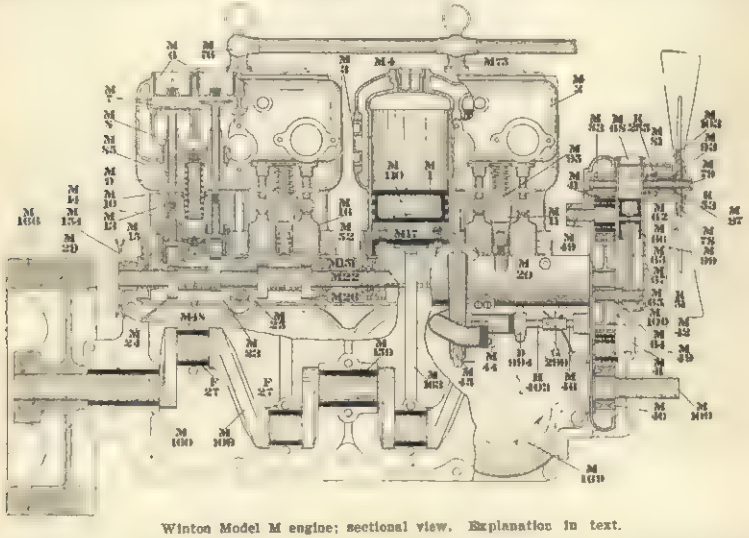


Winton Model M, 40-H. P., 4-cylinder car. Price $3500; chassis only, $3250; with Limousine body, $4500. Cylinders, 5x5, multiple disc clutch, 4 speeds and reverse, sliding gear shaft drive; tires, 34x4½-in. and wheel base, 112-in.

The fan is gear driven through a clutch similar to Model K. The purpose of the air pump is to supply air pressure to force gasoline from the rear tank to the carburetor, and oil from the oil tank to the lubricator which is placed on the dash. The air pump is driven by a pin inserted in the shaft gear.

The pipe to the carburetor passes between the cylinder pairs, close to the crank case, and continues through to the other side of the motor where is placed the carburetor. The water pump is the Winton type of centrifugal pump, such as has been used for several seasons.

The design of the crank case in general is in the form of four bulbs, one in line with each cylinder. The vertically split crank case construction, of course, is main-



Winton Model M engine; sectional view. Explanation in text.

tained, the detachable side being on the left and embodying the two usual inspection covers.

The spark plugs in the cylinders are inserted horizontally and are placed in pockets directly over the inlet valves and not in the center of the cylinders. The water jacket plates have been charged from rectangular aluminum plates into circular screw plugs.

Crank shaft has three long main bearings, one center and two ends. The usual Winton system connecting rod and main shaft bearing lubrication is continued.

One 6-volt solid electrolyte accumulator and one set of dry batteries, roller contact commutator and unit spark coil on dash, is the ignition equipment.

Lubrication by Hill Precision Oiler, eight leads and sight test attachment, driven by cam shaft.

GEAR BOX.

The transmission gear and clutch are in one aluminum casting case, the two chambers being separated with felt packing. This is necessary as the clutch runs in light oil, and the transmission gears in light grease.

CLUTCH.

The clutch is of the multiple disc type. It consists, of course, of alternate discs, one-half of which are connected to the transmission end, and the other half to the motor end. Practically the entire transmission and clutch are mounted on annular ball bearings.

The clutch consists of two spiders (M226 and M225) which are connected by six bolts (M230) which are surrounded by six spacer tubes, as shown in the section of the lower half of the clutch. One half of the discs have six lugs which fit loosely over these six spacer tubes, and as the spider (M226) is directly connected to the Oldham coupling between itself and the fly-wheel, these outer discs are in motion all the time the engine is in operation. Between each of these discs is placed another disc, small enough in diameter so that it comes inside of the spacer tubes referred to, and on its inner portion has four radially projecting tongues, which fit into four corresponding key seats cut in the steel casting (M234), which is keyed to the shaft (M209). As long as no pressure is applied to these discs, the outer disc can rotate without transmitting motion to the inner discs on the shaft (M209), which rotates the transmission gearing.

To obtain spring pressure, six spiral springs are spaced equi-distant around the outside of the clutch with their axes parallel to that of the clutch. They are carried on steel thimbles, which are carried by a plate (M229) which forces these discs together

up against the spider (M226), producing the necessary friction for engagement. The spring carrier plate (M229) is withdrawn toward the transmission to relieve the spring pressure. This motion is obtained by three pins (M264) passing through the spider (M225) and attached to another spider (M227). This last spider rotates freely on the shaft (M209) and by means of a fork and through the medium of a ball thrust bearing (M211) and the lever (M274) on the yoke shaft, withdraws the spring pressure when moved away from the clutch.

This construction makes an exceedingly compact disc clutch and allows ready adjustment of the spring pressure, or entire removal of the clutch springs. There is no end thrust due to the spring pressure, when the clutch is engaged.

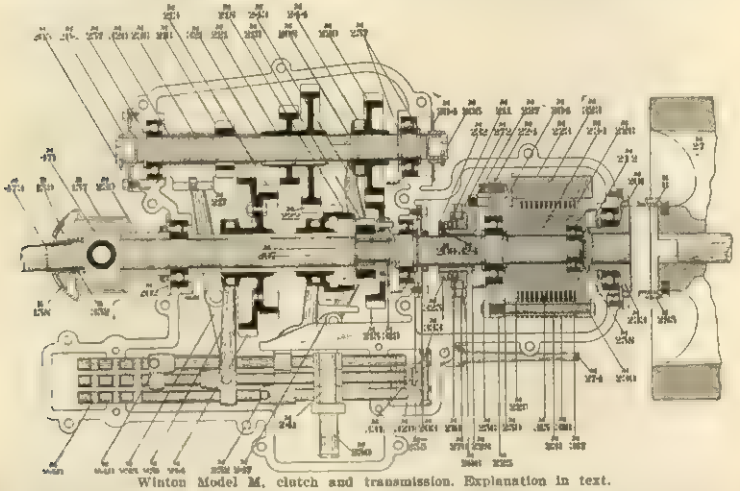
CHANGE GEAR

The gear changes are obtained, as is usual in the selective type with four speeds, by means of three shifter rods. It will be noted that the reverse idler (M217) is not in mesh with other gears except when in use.

To engage the reverse, the inner rod is moved to the left, which, through the lever (M235) moves the reverse idler (M217) to the right until it engages both the pinion on the counter shaft (M216) and the gear on the main shaft (M214), the other gears remaining as shown in the cut.

The first and second speeds are obtained by shifting the double gear (M214, M213) by means of operating the center shifting rod. When this is moved to the left, the pinion (M216) on the counter shaft engages the gear (M214) on the main shaft. This double gear is attached to the shaft (M207) by means of four milled keys in the latter, so that it can slide on the shaft, but must rotate with it. When the center shifting rod is moved to the right it engages the pinion (M221) with the gear (M213), giving the second speed forward. It is understood that the counter shaft is driven through all the changes so far by means of the gear (M215) which is directly connected to the clutch shaft (M209) meshing with the gear (M220) on the counter shaft. The other counter shaft gears (M216, M221 and M222) are keyed to the counter shaft and do not shift longitudinally. This gear (M220) fits on milled keys integral with the counter shaft, so that it has a motion along the axis of the counter shaft but must rotate with it.

The third and fourth speeds are obtained by moving the outer shifting rod. When moved to the right, the external-internal gear (M218) comes into engagement with the pinion (M219), which, through keys, is also direct connected to the clutch shaft (M209), which gives a direct drive from the fly-wheel through the clutch, and by attaching the clutch shaft (M209) to the transmission main shaft (M207) gives the direct drive through to the propeller shaft (M473). A second action takes place at this time, which shifts the counter shaft gear (M220) to the left, so that it is not in mesh with the clutch shaft gear (M215). This is obtained by having a pivoted lever (M243), one end of which shifts the gear (M220) and the other end has a roller which acts in a cam plate integral with the arm that shifts the external-internal gear (M218). As the lever (M252) is moved to the right by means of the outside shifting rod, the cam roller drops into the circular portion of the cam plate, which results in moving the gear (M220) on the counter shaft out of mesh with (M215). It will be noticed that upon this, the third speed, the counter shaft is stationary, and none of the gears in the case are in mesh and rotating. This gives the only true direct drive. The fourth speed is indirect; that is, the counter shaft is in



Winton Model M, clutch and transmission. Explanation in text.

use on the fourth speed. It is obtained by moving the outside shifting rod to the left from the position as shown on the cut until the external gear on the external-internal combination (M218) is in mesh with the counter shaft gear (M222). Inasmuch as the gear (M222) is much larger than the external gear (M218) the transmission main shaft (M207) will rotate at a higher speed than the clutch shaft (M209). The counter shaft gear (M220) does not shift its position as the fourth speed is engaged, because during this motion the roller at its other end fits between the parallel sides of the cam plate on the lever (M252).

The gears of the transmission are all of nickel steel hardened, and with the teeth so rounded as to make engagement very easy. The left ends of the shifter rods have three parallel slots milled in them, and over the center row are placed three steel balls, which have springs to force them into the slot of each of the rods. By means of this, there is no tendency for the gear combination to jar in or out, and it must remain as placed by the operator, although the remainder of the interlocking mechanism makes this absolutely safe, so that the principal use of these balls and notches is so that the operator can feel the ball drop in and know when the gear combination is properly engaged. Near the right end of these three rods each has a block (M241) and these blocks have a slot on their upper surface, so that the outside hand lever can slide a finger from one block clear across to the other block when all are in the neutral position. The blocks have milled on their under side a segment of a circle, into which fits a round pin (M250), which is suitably supported, and which moves in unison with the finger attached to the hand lever, which operates whichever block it is desired to move. Directly under this finger on the pin (M250) is milled a slot sufficiently wide and deep so as to permit the shifting block on the shifting rod to be moved to the right or left over it. This slot in the pin is always under the shifting finger attached to the hand lever, and the only block which can be moved is the one directly over the slot in the pin, the other two remaining positively locked, inasmuch as the pin fits into the slot milled in the bottom of the blocks. By this means only one shifting rod can be moved at a time, the other two remaining locked, and the one which can be moved is the one in which the finger is placed.

This makes it absolutely impossible to have two gear combinations engaged at one time, either accidentally or otherwise.

On the under side of the right end of the three shifter rods is milled a slot. These three slots are in line when the gears are in the neutral position. An arm (M333), which is pivoted at this point, has a projecting bar which fits up into these three rods when in the neutral position and prevents them from motion in any direction, even though the hand lever be operated, provided the clutch is not withdrawn. This projecting arm is constantly forced up against the three rods by means of a spring placed in under it at the point (M331). This pivoted locking arm is inter-connected with the clutch lever (M274) at its opposite end in such a way that it is not shifted from its position until the lever (M274) has been moved sufficiently to withdraw the spring pressure from the clutch plates, after which time it pulls the locking bar down. This intermittent motion is obtained by having a slot in the end of the rod (M331) and a pin in the opposite end of the clutch lever (M274). This pin works in the slot during the part of the motion necessary to disengage the clutch, and it strikes the bottom of the slot at this time, which releases the shifter rods, allowing them to move.

Assume that the clutch has been disengaged and the third speed engaged, and the clutch allowed to enter. When the third speed is engaged, the outside shifter rod has been moved clear to the right, so that the slot on its right end is not in line with the two slots of the other rods, and of course

Revolving auxiliary seats in Winton Model M tonneau.

is not in line with the bar on the end of the locking device (M333). The spring pressure forcing M333 against the rods, the arm will then come in contact with the circular part of the outside rod, and it does not fit in any of the rod slots, but as soon as the third speed is disengaged and brought into the neutral, these three slots will be in line, and the spring pressure forces the locking bar into the three slots, which prevents the operator from passing through the neutral. This is assuming that the clutch has not been disengaged, because if the clutch were disengaged the locking bar would be withdrawn and the operator could have passed directly into the fourth speed; so that when a gear is engaged, the operator can shift the transmission gears into a neutral position without withdrawing the clutch, but it is impossible to enter another gear unless the clutch has been released.

The gasoline tank, auxiliary gasoline tank, radiator, pump and muffler are all the well known Winton design.

The driving shaft bearings are on Timken rollers and the Winton torsion and radius rod construction is continued as are also the Winton semi-elliptic twin springs, float-

ing rear axle and bevel and differential gears.

The Winton steering mechanism of screw and nut design is continued with ball thrust bearings and universal joints of increased size and a shortened turning radius obtaining quicker action. Steering knuckles are roller bearing.

There are four brakes on driving wheel hubs, 2 external and 2 internal, operated thru equalizers. Internal brakes are operated by outside hand lever, which also releases clutch. External brakes are operated by pedal at driver's right foot, pedal at driver's left foot releases clutch and inside hand lever operates the speed change gear.

Body is built entirely of wood and carries seven passengers comfortably, there being two revolving auxiliary seats in the tonneau. The frame has been lengthened, with sides of one-piece channel section pressed steel, no sub frame. A permanently attached dust pan, covered with heavy canvas protects the engine and other parts and acts as a sound deadener. Ample storage space is provided under front and tonneau seats and a special design trunk carrier is placed over the gasoline tank. The equipment consists of 2 gas head lamps, 2 side oil lamps, one oil tail lamp, horn, full set of tools and locked tool box on running board.

Waltham Mfg. Co. Expanding

The Waltham Mfg. Co., Waltham, Mass., makers of the Orient air-cooled cars and Orient buckboard, have planned to double their output for 1907, having purchased a large plot of ground adjoining their present plant, on which they will erect several new buildings, which will be equipped with the most modern machinery and tools. They are planning for an output of 200 touring cars and 2000 buckboards. The 1907 line will comprise two 20 H. P. air-cooled touring cars listing at $2000 and $1750, respectively; also a 16 H. P. runabout listing at $1250, their 4 H. P. friction drive buckboard listing at $400 and delivery car of the same type at $450.

Since the resignation on September 1st of General Manager L. B. Gaylor the affairs of the company have been managed by an Advisory Committee consisting of Manager E. S. Church, Sales Manager E. P. Chalfont and Auditor L. J. Hart. Expert factory men are being added to the staff, and every effort will be made to improve the Orient product wherever possible.

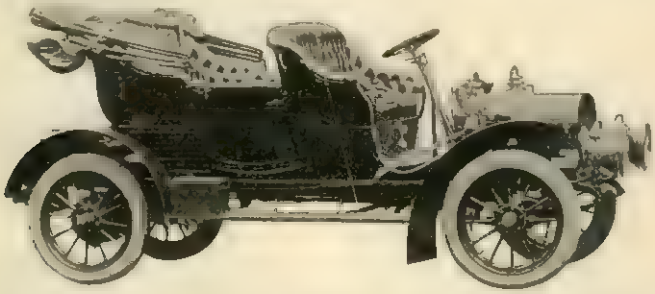
The Anderson Machine Co., Bedford, Ind., are making a 12½ H. P. 2-cylinder opposed, air cooled runabout, with high wheels and solid rubber tires Planetary transmission and steel cable drive. Price $450.

The Lozier Motor Co. have added a 200 by 60 ft. addition to their Plattsburg works, which will be devoted exclusively to the use of the experimental department, under the management of Mr. John J. Perrin.

The Buick Motor Company's large new plant at Flint, Mich., is rapidly nearing completion and preparations are being made to abandon the Jackson plant. The new building, which will be used for assembling, will afford 64,000 additional square feet of floor space.

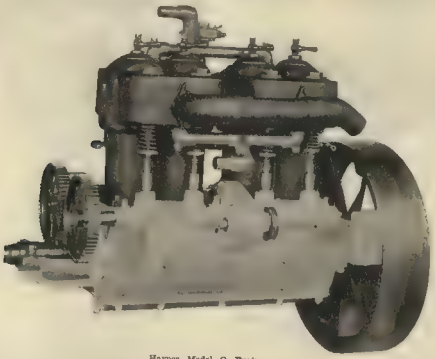
The Mason Motor Co., of Omaha, Neb., is planning a new brick factory, two or three stories in height, with 100-foot front and a depth of 150 feet. It its present location at East Fifth and Vine streets is found inadequate a 5-acre site will be selected just outside Omaha or near Altoona.

Howard Case & Co., Lethbridge, Alberta, Canada, are organizing a company to build motor cars from stock parts, using 14 to 20 H. P. air-cooled engine, friction transmission and side chain drive, and desire to have quotations from manufacturers of parts needed in the building of such a car.



The Adams Farwell 1907 touring car; new design body, wheel base increased to 106 inches, springs increased to 44 inches in the front and to 48 inches in the rear, seating capacity five persons, weight 2500 lbs.; tires 34x4½, 40-45 H. P., 5-cylinder 5x5, air-cooled engine, revolving around vertical stationary crankshaft, previously described in detail; sliding gear transmission, four speeds forward and one reverse, chain drive.

ing impossible to subject the car to a sudden jerk. Located under the front foot board the clutch is readily accessible for adjustment.



Haynes Model O Engine.

This distinctive feature in the Haynes transmissions is one which assures greater ease and perfect safety of operation, and entirely

The Haynes Transmission.

prevents the violent shock that would otherwise be caused by changing from a high to a low gear.

In the hub of the master gear on the countershaft is a ratchet and pawl device which permits the car to coast with middle or low gear engaged until the speed of car and engine are equal, when the pawls engage the ratchet and the engine takes up the load Thus change may be made from high to middle or low gear without any possibility of burring or stripping the gears, for when changing from high to a lower gear the car is running faster than the engine, and the gears running idle may be manipulated by the operator at will.

The universal joints in the Haynes cars are different in principle from those in common

use. Two drop forged steel forks with broad flat inner faces are formed; a flat faced square steel block is fitted perfectly between these forks and is held in position by pins running both ways through block and through forks. The driving friction is exerted on the flat inner faces of the forks and surface of the block, no strain being thrown on the pins. Both forks and block are case hardened. It is claimed that this construction secures a much larger wearing surface than can be obtained on pins, thus reducing the wear. The entire joint is encased in an oil tight housing and packed in grease sufficient for hundreds of miles. The driving shaft is of special steel 1¼ in. diameter, connected both at transmission and axle ends by universal joints.

Haynes Universal Joint.

The Haynes Master Clutch.

13,770 Miles for $7.00.

Some one has called the bicycle "the poor man's trolley car," because so many are used for business purposes and are so satisfactory in such service, but the "motor cycle" has so far been in the eye of the public mostly as a pleasure vehicle.

Many people know that young, active men can make fast time and go long distances on them, but few know how really practical and satisfactory the modern perfected motor bicycle is for regular business service day in and day out and all kinds of weather.

Physicians and contractors are using them in many places with great economy over horse-drawn service. Economy both in expense and time and taking roads that no other vehicle, horse-drawn or motor-driven, would attempt.

A remarkable instance of this has come to our attention and shows what can be done with the little machine with intelligent handling. Fred. S. Roberts, of Mt. Vernon, N. Y., purchased a second-hand machine in June, 1905, and from July 1 to November 15 rode it 13,770 miles, or about ninety miles per day, at a total expense of $7.00, and saved in that time $459.00 in railroad fares.

We quote from his letter as follows:

Mount Vernon, N. Y., Nov. 21, 1905.

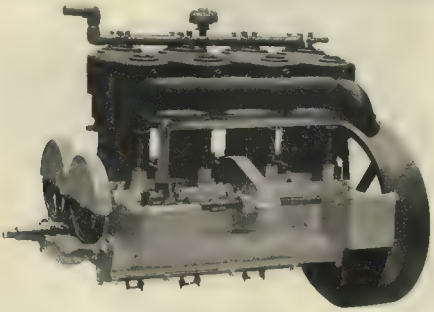
I can only state that I bought my motor bicycle purely and simply as a business proposition and as my territory as business agent I must cover all that portion of Long Island included in Queens and Nassau Counties, and in addition the Borough of Richmond (Staten Island). I find the condition of roads fairly good and it is rarely that I did not cover from 90 to 100 miles every business day since on or about July 1, 1905, which you can readily see would make my total distance covered enormous. To be sure, I have taken great care of the machine, same as one would of a fine horse, and that's why I was enabled to put my "Indian" to such severe tests. First thing I did was to study the machine and understand why and how each and every part worked, being an electrician and a mechanic I naturally pursued this course, and after I was a master of "compression," "intake" and "exhaust" valves, spark plug education, etc., etc., I was enabled to go at a high or low rate of speed (medium speed is best for air-cooled engines), and thus get over an immense territory and not be obliged to pay excessive railroad fares or wait long periods for trains or cars—it, to the writer's opinion, is purely gross ignorance that breaks down a good many machines that with proper care would last for an indefinite length of time. I might state also that I am a man weighing 180 pounds and the machine just walks up any old hill just as easy as if it were going down. Virtually good solid oil is cheaper than parts. Wishing this may fully cover all points in your letter of inquiry, I am most truly yours,

FRED. S. ROBERTS.

A better tribute than this to a worthy article it would be difficult to imagine.

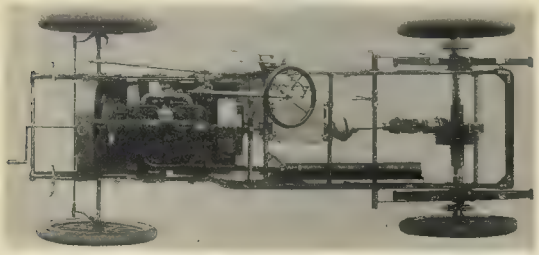
A favorable decision to the H. H. Franklin Mfg. Co. was the outcome of the recent suit instituted by the New York Automobile Co. The complaint was dismissed with costs. The contention arose from the fact that John Wilkinson of the Franklin Co., is the inventor of the 4-cylinder air-cooled engine used in Franklin cars, and the New York Automobile Co. claimed that he had obtained his ideas while in their employ before he was engaged by the Franklin Co. Judge W. S. Andrews held that his immatured thoughts were his own, even if gained at the expense of the New York Automobile Co., and that as he had not used any of their designs, models, patterns, etc., they had no case against him or the company with whom he is connected.

large cooling surface. Two fans, one back of radiator, the other in the flywheel, sweeps the air through the radiator and over the engine rapidly, it being confined between the dustpan and the hood. The very large volume of water around the valves also greatly assists in cooling. The pump is simply and strongly constructed. A dustpan of sheet steel extends from the radiator rearward underneath the transmission case. Thus every working part of car is completely housed.



Haynes Model B Engine.

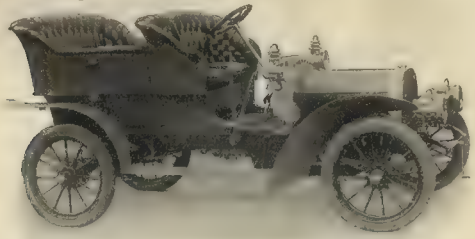
stiff coil springs are fitted, one on each side between the lugs and forks. Revolving loosely around the face of the pulley is a steel band, the hub of which is keyed to the transmission shaft. This band is split crosswise, one end attached to an arm from its hub, the other end to a lever which, when actuated by a cam controlled by the foot lever, constricts the band on the pulley and thus transmits the power from the engine via the lugs on inner rim of flywheel through the springs to the arms, thence to the pulley, which revolves the constricted band and carries the power to the transmission shaft. The coil springs effectually cushion the transmission, driving mechanism and all keys from the shocks and racking effect caused by sudden application of high power, and greatly prolong the life of the machine. The pulley and band arrangement enables the operator to pick up speed without a jar or tremor, it be-



Haynes Model O Chassis.

In constructing the Haynes master clutch they cast from bronze a hub bearing four radial arms, each terminating in a fork. Integral with these arms is a 10¼ in. pulley with a 1⅛ in. face. The hub is turned to a bearing for the end of crank shaft, while the arms extend to the inner rim of the flywheel on which are cast four lugs, one resting between the two prongs of each fork. Very

case, giving ready access to all internal parts of engine, i.e., crank shaft, connecting rods, pistons and bearings. The cam shaft housings are external. Thus access may be had to any part of the engine for repairs, adjustments or inspection without disturbing any other part.

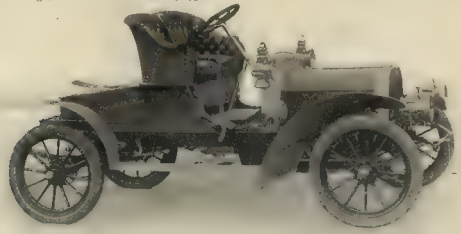


Haynes Model O Touring Car.

The piston ring construction is peculiar and shows a very high H. P. in actual test. The arrangement consists of three rings, one 7-16 in. wide by 1/8 in. thick, over which is fitted two rings, each 7-32 in. wide by 1/8 in. thick, with their openings on opposite sides of the under ring, which constantly expands the outer rings, affording perfect compression. Each piston is fitted with three sets of these triplicate rings, in addition to which the wrist pin is held in position by a single ring in a fourth groove, making a total of ten rings to each piston.

Connecting rods are I-section steel drop forgings. The crank shaft is made from a special high carbon steel specially treated. Its tensile strength is 100,000 lbs.; elastic limit 70,000 lbs. Cam shafts are of drill rod; cams case hardened steel; crankshaft end bearings are of Parsons white bronze; rollers adjustable for wear, the total length of bearinga surface on crankshaft, including rollers, being 19 inches.

A mechanical force feed oiler with individual pump to each lead pipe is used to lubricate the engine. One pipe leads to each piston, and one pipe discharges into the crank case, keeping the level constant. The crankshaft, connecting rods, lower half of pistons and cams and cam shafts are oiled by the splash from the crank case pool. The transmission runs in a bath of oil. The universal joints are housed and packed in grease. The housing for the driving mechanism in the rear axle is also packed in grease. Sufficient lubrication is thus provided for a run of several hundred miles.



Haynes 1906 Model O Runabout.

Ignition is by jump spark, one set of dry cells and one storage battery being used and arrangement made for the use of a magneto if desired. The commutator is housed from dirt and filled with lubricant, and it has a long contact. The circulation pump is gear driven and is powerful enough to throw a heavy stream of water 40 feet through a nozzle. This strong pump effects very rapid circulation through a cellular radiator with

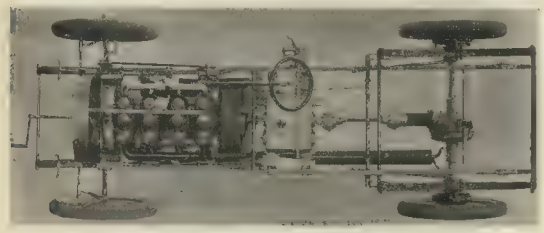
Haynes 4-Cylinder 50 H. P. Car for 1906—Model R.

The new Haynes cars offered for 1906 by the Haynes Automobile Company of Kokomo, Ind., are a 50 H. P. 4 cylinder vehicle known as Model R, and a runabout, Model O, which has the same chassis. Haynes 1906 car body design is the creation of a Paris body maker, and the first cars turned out, which were toured about the country on a 5000-mile demonstration trip, were frequently taken for French productions. The materials used and design of the Haynes cars are the result of the Haynes Company's twelve years' successful experience in motor car building. Most of the materials, alloys and tempers in the vital parts are peculiar to Haynes cars, many of them being made in their own shops, foundry and furnace. In such portions of the car where stock materials are suitable, such as upholstery, etc., the best grade of materials obtainable are used. Seat and cushion stuffing is of pure curled gray hair and hand buffed leather is used. The bodies receive 18 coats of lead, paint and varnish.

The success of the Haynes cars has been, in quite a large measure, due to their adopting various valuable suggestions made by users. As these suggestions are based upon the knowledge gained by practical road experience and intimate acquaintance with conditions met in daily road service, the Haynes Company has shown good judgment in being guided by these suggestions and in incorporating improvements along the lines suggested in its cars.

Haynes Model R, 50 H. P., 4-Cylinder Car.

The Model R engine has four vertical cylinders cast separately, each 5½x6 ins. It develops 50 H. P. The cylinder metal is a special compound which takes a polish like glass, holding compression perfectly. The water jackets are cast integral and provide an unusually large water space entirely surrounding the valves. Inlet and exhaust valves are on opposite sides and are turned from solid nickel steel alloy drop forgings. The intermediate reducing gear is fibre lined to silence gear noise. Reducing gears, cams and cam shafts are completely housed and oiled by splash from the engine base. The engine is hung directly to the steel frame by arms cast integral on the upper half of the crank case; no sub-frame being used. This construction permits the removal of lower half of crank



Haynes Model R Chassis.

may be silent, may be easy riding and easily handled, and may be high-powered and show a large mileage to the gallon of gasoline consumed, but all this does not make the car satisfactory to its owner and user if the repair bills are large and constant, and there are many days in the season when the car is in the shop instead of on the road when the owner desires to use it. Ball bearings, when at their best, are fine things, but they are delicate, and the breakage of a single ball may put a car out of service for days and entail a repair bill too large to be agreeable.

finished and well lubricated plain bearings are better in every way. Believing the plain bearing really the best, these well known makers of fine and costly cars will continue to use only plain bearings for the season of 1906.

The Welch 7-passenger motor car has the following specifications: Wheel base 118 in., gauge 56½ in., wheels 36x4½ in., motor 4-cylinders, 4⅝x5 in., 50 H. P. maximum, water-cooled, friction gear-change selection, silent engagement; body a 7-passenger open tonneau, side entrance, doors swinging to rear, adapted to take Welch Brothers patent-

Fig. 2. Welch 7-passenger motor car; weight 3325 lbs., to which the Welch limousine top may be applied, producing the car body shown in Fig. 1.

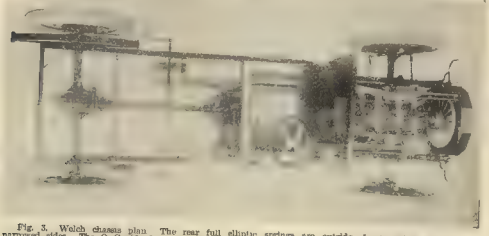


Fig. 3. Welch chassis plan. The rear full elliptic springs are outside, front springs under the narrowed sides. The O O side frame bends are strongly reinforced by flat bars bolted to the bronze arms. Hit in. long by 38 in. wide in rear and 28 in. wide in front. Principal chassis frame dimensions not increase the total car length, and the wide sweep of the front wheels makes the car turn in a small circle.

The Welch Brothers say that when the car has ample motive power the ball bearing is not only a needless and costly menace to reliability, but that it does not in reality add in the slightest degree to the comfort nor pleasure of the car user, and is always the weakest and most uncertain member of the whole propulsion assemblage, and that well

ed attachment, which converts this large 7-passenger open tonneau into an elegantly appointed Limousine body; weight, open tonneau, 3225 lbs.; with the Limousine top the weight is 3500 lbs.; a heater keeps the enclosed part of the body at any desired temperature and there are electric lights inside.

The Welch 5-passenger car, body of which

always driven when the motor runs. The fan is 18 in. dia., 20 vanes, and has a common axis with that of the pump, both pump and fan being driven by the same 1¼ inch wide rawhide belt.

BODIES AND LOCKERS.

The detachable Limousine top, made under the Welch patents only, provides two styles of car of the highest and most luxurious type in one car, which may be either an open tonneau or a Limousine, seating 7 passengers in either form, as preferred.

For long tours the 5-passenger tonneau with cape top, is lighter and faster, and is the more suitable. The finish and appointments of the 5-passenger car are in every way equal to the 7-passenger vehicles. The weight is

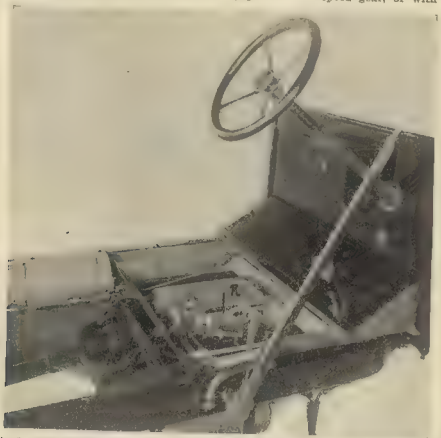


Fig. 6. Welch chassis, middle part, right side, showing seating; front showing the control. The single hand lever has three distinct positions, is not ratchet sectored nor inserted up nor down, and gives four effects, the cylindrical grip has a short up and down movement, which, works a switch-point in the gear linkage, through a long rod carried down close inside the frame to a horizontal rocker linked to the switch-point. The whole of this grip action operating to carry the left rocker arm R, either up or down from neutral horizontal position of the R shown in the illustration, by the lever movement, according to the position of the grip. When pushed to extreme front, as in the illustration, the hand lever cuts out all the gears, leaving them standing still, and drives the bevel pinion directly at the crank-shaft speed.

considerably below that of the 7-passenger, the cost is a little less, and the speed is greater. All forms of Welch car bodies have a very complete system of lockers and tool compartments for spare tires, batteries and small luggage generally.

Batteries, spark coils and tires are fitted at option of purchaser, and if time enough is given colors of bodies and trimmings will also be as selected.

CONTROL.

The Welch steering wheel is as before on a telescoping shaft, the wheel pushing down and forward so as to be out of the way of entrance to the driver's seat. Hand wheel position adjustment retention knob on top of wheel.

The spark and throttle control are by two horizontally moving hand levers pivoted on a double ratchet quadrant fixed to the top of the steering shaft stationary supporting sleeve.

The rear hub brakes are applied by a large pedal, ratchet retained and foot released.

The gear change is made by an outside hand lever having a sliding grip, also previously described. When this lever is moved one way it engages the high gear, in which none of the change gears are driven. Moved the other way, grip down, the hand lever engages the low speed gear, or with the grip raised, movement of the lever in the second direction first engages the reverse, and then continued movement of the lever in the same direction applies the powerful emergency brake on the line shaft in front of the front universal joint fork.

An interlocking linkage between the hand lever and the clutch forks permits the high gear engagement to be made at any time, but prevents imparting motion to the low and reverse gears before the low speed clutch or reversing clutch engagement is made. As the drive is through multiple disk friction clutches all speed changes are made without shock or

The Welch 1906 Motor Cars

HUGH DOLNAR

The Welch Motor Car Company, Pontiac, Michigan, U. S. A., will offer for the season of 1906 three different styles of motor cars, all using substantially the same chassis: (1) A plain 5-passenger tonneau body, side entrance, doors swinging to front, fitted with a cape-top as an extra, this being a new 1906 model; (2) a 7-passenger tonneau body, side entrance, doors swinging to rear; and (3) the same 7-passenger body fitted with Welch Bros. patented detachable Limousine top.

The Welch cars are all driven by one style of motor, the same in principal members as used since 1903. The four cylinders were first 4½ in., as described in these columns October 1, 1904, and the 1906 Welch motors will be

Fig. 1, 40 H. P. Welch "Pullman Limousine," showing the Welch patented limousine top applied to the Welch 7-passenger tonneau body; weight 3300 lbs.; interior heated by exhaust and lighted by electric light.

4⅝ bore by 5 in. stroke. These motors, it will be remembered, have the cam shaft on top of the cylinders, valve levers and valve stems set at about 45 degrees to the vertical plane, intake and exhaust levers for each cylinder worked by the same single cam. This Welch 4-cylinder motor (4⅝x5) shows over 50 brake horse power at 1250 revolutions per minute, which drives the car from 40 to 65 miles per hour according to the gear reduction ratio selected. The Welch cars are geared to suit the weight of car and the roads upon which the car is expected to be driven.

Welch Brothers were the first American motor builders to place the cam-shaft on top of the cylinders, as is now done by other first-class constructors in this country, and the very first, so far as is known, to fit the car motor with integral cams and cam-shaft, a construction also now used freely by others. Welch Brothers are yet, so far as the writer knows, the only gas engine builders to make a single cam mechanically operate both the intake and exhaust valves of one cylinder. It is now fully proved by practice that gas engine valve stems may be placed at any angle between horizontal and vertical, without injurious effect on the valve and valve seat wear, provided suitable proportions are adopted, and it is still the belief that the best results are obtained by making the compression chamber greatest dimension as small as is consistent with imperative construction requirements. This calls for the nearest practicable approach to the spherical combustion chamber, and up to 1905 the tops of the Welch pistons were cupped to make the chamber approximate the globular form. This cupped piston can catch cylinder lubricating oil, and because of this the pistons were changed from concave to slightly crowned tops for 1906, and this form will be retained in the 1906 Welch pistons. The 1905 casing for the cam-shaft bevel gears is retained in 1906, having shown no objectionable features. The rods now have babbitted bearings on the crank-wrists instead of the bronze boxes used up to 1905. All the steel used in the Welch car shafts is imported, the foreign material having the greater strength, it is claimed.

The Welch cars will continue to use plain bearings only. Carefully conducted tests made in the Welch laboratory show only very small power losses due to the use of plain bearings, and it is not regarded by the Welch brothers as sound engineering practice to introduce some hundreds of additional costly and delicate pieces to save a very small amount of fuel.

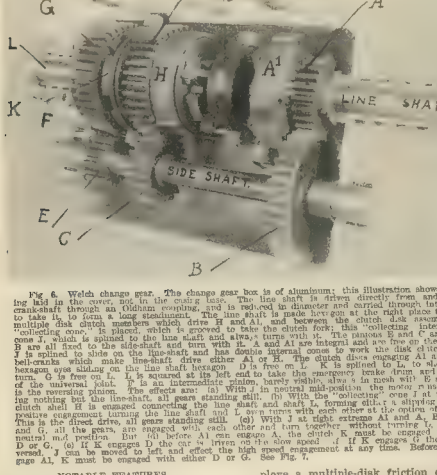
Without question, reliability is the first and principal of motor car requirements. A car

noise. The multiple disk high speed engagement is powerful and permits a slipping drive for running at low speeds on the high gear in crowded streets.

The rear hub brakes, pedal applied, have ample power for all ordinary service, and the emergency brake is seldom required.

The whole Welch control is extremely simple and substantial, and the car has enough power to be driven on the high gear most of the time, with no change gearing in motion.

The Welch was first to place the multiple disk clutch in a motor car, and the merits of this form of friction engagement are shown by numerous followers of Welch practice in this particular.



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NOTABLE FEATURES

Welch Brothers, in designing their cars, have placed reliability before any and all other considerations, their theory being that the first requirement of a car is that it shall at all times and constantly be ready to go on the road: second place is given to certainty of handling and control; the car must be ready to use when the owner wants it, and must respond to his desires when on the road.

It would seem that these two qualifications of reliability and docile responsiveness were elementary, and that they must therefore control the detail selections and rejections of all car designers.

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CHASSIS FRAME.

This is of pressed steel, channel section, 4½ in. greatest depth, curved ends, which take drop forged spring eyes. The chassis frame is 145 in. long, 38 in. wide in rear of front board and 28 in. wide forward, giving wheel room for a short turn.

The bronze engine base has lugs reaching across to the chassis frame sides, and the change gear box is carried under two pressed steel cross-girts.

Straight flat steel bars are bolted to the low cylinder diameter at the head end.

The rod end boxes are scraped to fit, as are the crank-shaft boxes. The lubrication is by splash pits, supplied by "Precision" oiler feeds.

RADIATION.

The radiator is an assemblage of hexagon tubes having expanded hexagon ends, piled together and united by soft soldering, and small water chambers are made at the top and bottom of the radiator, the water circulating pump being placed in the middle of the radiator, with horizontal water passages formed in the middle of the assemblage of hexagon tubes, so that the centrifugal pump takes water from the upper part of the radiator and delivers it to the lower part.

Fig. 4. Welch chassis, front oblique, showing radiator, front spring axle fork and Hill Precision oiler, which supplies lubrication for all driven parts. The water circulating centrifugal pump is placed in the middle of the radiator, access by removing the front plate.

under sides of the crank-box lugs, and are fixed to the front and rear gear-box cross-girts, so as to strongly reinforce the O G bends in the side frames.

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The 4 cylinders are 4⅝x5 in. The compression is 95 lbs., and the cylinders are water-cooled. As this engine was previously described at some length it is only necessary to note that Welch cylinders are now finished by grinding with a high-speed emery wheel flooded with water, instead of by lapping as formerly.

The pistons are ground in the grinding machine, five-thousandths below cylinder diameter at the open end and nine-thousandths be-

The water piping is of copper, no rubber hose, and is water tight and easily connected and disconnected. The circulation is natural, bottom of radiator to bottoms of water-jackets, and tops of water-jackets to top row of radiator tubes, under a partial floor of the top radiator water chamber, so that vapor from the jackets is sure to be fully condensed before it can rise and enter the top water chamber. By this means all loss of water by evaporation is obviated, and as the copper piping is water tight, water renewal is seldom required.

The pump circulation is the same in direction as the thermal circulation, so that the two work in harmony, though the pump is

The Welch 1906 Motor Cars

HUGH DOLNAR

The Welch Motor Car Company, Pontiac, Michigan, U. S. A., will offer for the season of 1906 three different styles of motor cars, all using substantially the same chassis: (1) A plain 5-passenger tonneau body, side entrance, doors swinging to front, fitted with a cape-top as an extra, this being a new 1906 model; (2) a 7-passenger tonneau body, side entrance, doors swinging to rear; and (3) the same 7-passenger body fitted with Welch Bros. patented detachable Limousine top.

The Welch cars are all driven by one style of motor, the same in principal members as used since 1903. The four cylinders were first 4½ in., as described in these columns October 1, 1904, and the 1906 Welch motors will be

Fig. 1, 40 H. P. Welch "Pullman Limousine," showing the Welch patented limousine top applied to the Welch 7-passenger tonneau body; weight 3300 lbs.; interior heated by exhaust and lighted by electric light.

4⅝ bore by 5 in. stroke. These motors, it will be remembered, have the cam shaft on top of the cylinders, valve levers and valve stems set at about 45 degrees to the vertical plane, intake and exhaust levers for each cylinder worked by the same single cam. This Welch 4-cylinder motor (4⅝x5) shows over 50 brake horse power at 1250 revolutions per minute, which drives the car from 40 to 65 miles per hour according to the gear reduction ratio selected. The Welch cars are geared to suit the weight of car and the roads upon which the car is expected to be driven.

Welch Brothers were the first American motor builders to place the cam-shaft on top of the cylinders, as is now done by other first-class constructors in this country, and the very first, so far as is known, to fit the car motor with integral cams and cam-shaft, a construction also now used freely by others. Welch Brothers are yet, so far as the writer knows, the only gas engine builders to make a single cam mechanically operate both the intake and exhaust valves of one cylinder. It is now fully proved by practice that gas engine valve stems may be placed at any angle between horizontal and vertical, without injurious effect on the valve and valve seat wear, provided suitable proportions are adopted, and it is still the belief that the best results are obtained by making the compression chamber greatest dimension as small as is consistent with imperative construction requirements. This calls for the nearest practicable approach to the spherical combustion chamber, and up to 1905 the tops of the Welch pistons were cupped to make the chamber approximate the globular form. This cupped piston can catch cylinder lubricating oil, and because of this the pistons were changed from concave to slightly crowned tops for 1906, and this form will be retained in the 1906 Welch pistons. The 1905 casing for the cam-shaft bevel gears is retained in 1906, having shown no objectionable features. The rods now have babbitted bearings on the crank-wrists instead of the bronze boxes used up to 1905. All the steel used in the Welch car shafts is imported, the foreign material having the greater strength, it is claimed.

The Welch cars will continue to use plain bearings only. Carefully conducted tests made in the Welch laboratory show only very small power losses due to the use of plain bearings, and it is not regarded by the Welch brothers as sound engineering practice to introduce some hundreds of additional costly and delicate pieces to save a very small amount of fuel.

Without question, reliability is the first and principal of motor car requirements. A car

may be silent, may be easy riding and easily handled, and may be high-powered and show a large mileage to the gallon of gasoline consumed, but all this does not make the car satisfactory to its owner and user if the repair bills are large and constant, and there are many days in the season when the car is in the shop instead of on the road when the owner desires to use it. Ball bearings, when at their best, are fine things, but they are delicate, and the breakage of a single ball may put a car out of service for days and entail a repair bill too large to be agreeable.

finished and well lubricated plain bearings are better in every way. Believing the plain bearing really the best, these well known makers of fine and costly cars will continue to use only plain bearings for the season of 1906.

The Welch 7-passenger motor car has the following specifications: Wheel base 118 in., gauge 56½ in., wheels 36x4½ in., motor 4-cylinders, 4⅝x5 in., 50 H. P. maximum, water-cooled, friction gear-change selection, silent engagement; body a 7-passenger open tonneau, side entrance, doors swinging to rear, adapted to take Welch Brothers patent-

Fig. 2. Welch 7-passenger motor car; weight 3325 lbs., to which the Welch limousine top may be applied, producing the car body shown in Fig. 1.

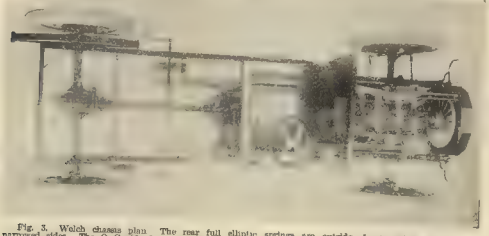

Fig. 3. Welch chassis plan. The rear full elliptic springs are outside, front springs under the narrowed sides. The O O side frame bends are strongly reinforced by flat bars bolted to the bronze arms. Hit in. long by 38 in. wide in rear and 28 in. wide in front. Principal chassis frame dimensions not increase the total car length, and the wide sweep of the front wheels makes the car turn in a small circle.

The Welch Brothers say that when the car has ample motive power the ball bearing is not only a needless and costly menace to reliability, but that it does not in reality add in the slightest degree to the comfort nor pleasure of the car user, and is always the weakest and most uncertain member of the whole propulsion assemblage, and that well

ed attachment, which converts this large 7-passenger open tonneau into an elegantly appointed Limousine body; weight, open tonneau, 3225 lbs.; with the Limousine top the weight is 3500 lbs.; a heater keeps the enclosed part of the body at any desired temperature and there are electric lights inside.

The Welch 5-passenger car, body of which

was not quite completed at time of writing, November 24, has the same chassis as the 7-passenger car in every particular. The body is a side entrance tonneau, latest "straight line" design, doors swinging to front; weight about 3000 lbs.

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The pump circulation is the same in direction as the thermal circulation, so that the two work in harmony, though the pump is

always driven when the motor runs. The fan is 18 in. dia., 20 vanes, and has a common axis with that of the pump, both pump and fan being driven by the same 1¼ inch wide rawhide belt.

BODIES AND LOCKERS.

The detachable Limousine top, made under the Welch patents only, provides two styles of car of the highest and most luxurious type in one car, which may be either an open tonneau or a Limousine, seating 7 passengers in either form, as preferred.

For long tours the 5-passenger tonneau with cape top, is lighter and faster, and is the more suitable. The finish and appointments of the 5-passenger car are in every way equal to the 7-passenger vehicles. The weight is

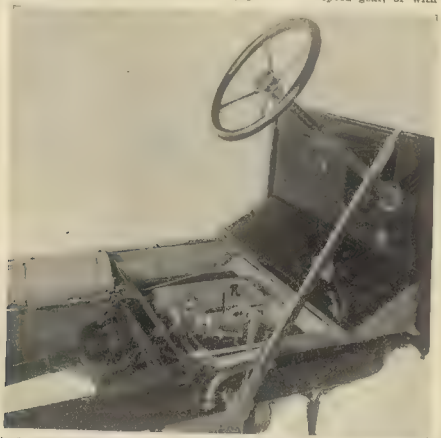

Fig. 6. Welch chassis, middle part, right side, showing seating; front showing the control. The single hand lever has three distinct positions, is not ratchet sectored nor inserted up nor down, and gives four effects, the cylindrical grip has a short up and down movement, which, works a switch-point in the gear linkage, through a long rod carried down close inside the frame to a horizontal rocker linked to the switch-point. The whole of this grip action operating to carry the left rocker arm R, either up or down from neutral horizontal position of the R shown in the illustration, by the lever movement, according to the position of the grip. When pushed to extreme front, as in the illustration, the hand lever cuts out all the gears, leaving them standing still, and drives the bevel pinion directly at the crank-shaft speed.

considerably below that of the 7-passenger, the cost is a little less, and the speed is greater. All forms of Welch car bodies have a very complete system of lockers and tool compartments for spare tires, batteries and small luggage generally.

Batteries, spark coils and tires are fitted at option of purchaser, and if time enough is given colors of bodies and trimmings will also be as selected.

CONTROL.

The Welch steering wheel is as before on a telescoping shaft, the wheel pushing down and forward so as to be out of the way of entrance to the driver's seat. Hand wheel position adjustment retention knob on top of wheel.

The spark and throttle control are by two horizontally moving hand levers pivoted on a double ratchet quadrant fixed to the top of the steering shaft stationary supporting sleeve.

The rear hub brakes are applied by a large pedal, ratchet retained and foot released.

The gear change is made by an outside hand lever having a sliding grip, also previously described. When this lever is moved one way it engages the high gear, in which none of the change gears are driven. Moved the other way, grip down, the hand lever engages the low speed gear, or with the grip raised, movement of the lever in the second direction first engages the reverse, and then continued movement of the lever in the same direction applies the powerful emergency brake on the line shaft in front of the front universal joint fork.

An interlocking linkage between the hand lever and the clutch forks permits the high gear engagement to be made at any time, but prevents imparting motion to the low and reverse gears before the low speed clutch or reversing clutch engagement is made. As the drive is through multiple disk friction clutches all speed changes are made without shock or

noise. The multiple disk high speed engagement is powerful and permits a slipping drive for running at low speeds on the high gear in crowded streets.

The rear hub brakes, pedal applied, have ample power for all ordinary service, and the emergency brake is seldom required.

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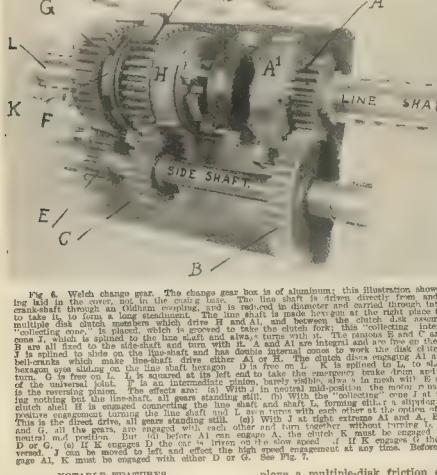

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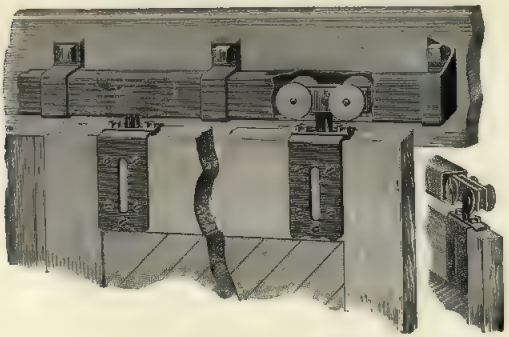
STEEL BARN DOOR HANGERS.



Wilcox Trolley.

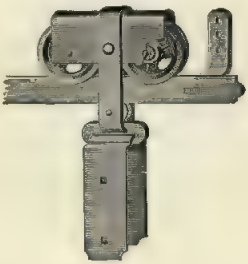
No. **123.** Hangers, Suitable for Doors 1½ to 2¼ Inches Thick.....Per Dozen Pairs $36 00

No. **131.** Trolley Track.....Per Foot 25

Extra Track Brackets .....Each 20

A Pair of Hangers consists of **2** Hangers and Carriers, **1** each Right, Left and Center Bracket, complete with Screws for Hangers and Lag Screws for Brackets. Heavy or Extra Wide Doors require extra Center Brackets.

Packed as Wanted



Hinged.

Swinging, Roller Bearing, Steel, Endless Run.

Requires Special Track. Furnished Regularly for Doors 1¾ Inches Thick.

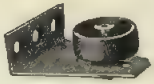
No. **243.** 3½ Inch Wheel, Double Apron **1-8** x 2¼ Inches, **6** Inches Long, with Bolts.....Per Dozen Pairs $16 00

Use No. **207** Track with this Hanger.

One Pair in a Box.

BARN DOOR STAY ROLLERS.

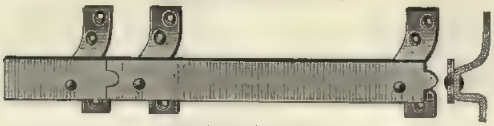
No. 157.



No. 153.

No. **157**
No **153.** Steel, Adjustable and Reversible — Per Dozen $1 25 " 2 00

BARN DOOR RAIL.



Wrought Steel, Japanned.

Carried in **6, 8** and **10** Foot Lengths.

No. **1.** **3-16** x **1¼** Inches, Weight per **100** Feet **96** Pounds . . . . . Per 100 Feet $6 50
No. **3.** **3-16** x **1** Inch, Weight per **100** Feet **78** Pounds... ..... " " 5 50

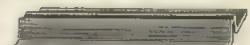
Wrought Steel, Japanned.

Carried in **6, 8** and **10** Foot Lengths.

No. **207.** For Hinged Hangers, **3-16** x **1¼** Inches, Weight per **100** Feet **105** Pounds.....Per 100 Feet $11 00

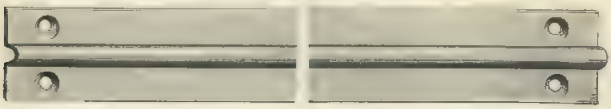
SLIDING DOOR RAIL.

No. 990¼.



No. 28.

No **990¼.** **1-4** Inch, Wrought Brass, in **2, 4** and **6** Foot Lengths .....Per Foot $0 10
No. **28.** **3-4** Inch, Wrought Steel, in **4** and **6** Foot Lengths.. ..... " 09



No. **990¼.** **3-4** Inch, Wrought Brass, in **2, 4** and **6** Foot Lengths. ... Per Foot $0 12
No. **990.** **1⅛** Inch, Wrought Iron, Bronzed in **2, 4, 6** and **8** Foot Lengths " 15
No **990¾.** **1⅛** Inch, Wrought Brass, in **2, 4, 6** and **8** Foot Lengths.. " 22

HOUSE DOOR HANGERS.

No. 119.

No 122.

Wilcox Trolley No. 119.

Steel, Ball Bearing, Vulcanized Fibre Wheel, Adjustable Track.

Price per Set, including Track.

DOUBLE DOORS			SINGLE DOORS		
No.	Size of Opening.	Per Set.	No.	Size of Opening	Per Set.
26	6 Feet	$6 00	**13**	3 Feet	$3 00
27	7 Feet	6 50	**13 1-2**	3 Feet 6 Inches	3 25
28	8 Feet	7 00	**14**	4 Feet	3 50
29	9 Feet	7 50	**14 1-2**	4 Feet 6 Inches	3 75
210	10 Feet	8 00	**15**	5 Feet	4 00
			16	6 Feet	4 50
			17	7 Feet	5 00
			18	8 Feet	5 50

Hangers for **Double** Doors, Without Track ..... Per Set $3 00
Hangers for **Single** Doors, Without Track ..... " 1 50
Extra Track ..... Per Foot 25

Le Roy. No. 122.

Ball Bearing, Noiseless, Adjustable Track.

Price per Set, including Track.

DOUBLE DOORS.			SINGLE DOORS		
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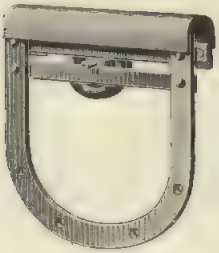
			17	7 Feet	5 50
			18	8 Feet	6 00

Hangers for **Double** Doors, without Track ..... Per Set $3 50
Hangers for **Single** Doors, without Track ..... " 1 75

The list price of Track without Hangers is found by deducting the list price of Hangers without Track from list of Complete Sets shown in above Table.

STEEL BARN DOOR HANGERS.



Lane's.

L. T.

Lane's.

Steel. Covered.

No. **11.** 3 Inch Steel Wheel, 1-4 x 1 Inch Strap, 5 Foot Run . . Per Dozen Pairs $15 00
No. **11½.** 4 Inch Steel Wheel, 1-4 x 1 Inch Strap, 10 Foot Run . . " " 18 00
No. **12.** 4 Inch Steel Wheel, 5-16 x 1 1-16 Inch Strap, 10 Foot Run " " 25 00

Half Dozen Pairs in a Crate.

L. T.

Steel, Roller Bearing, Endless Run.

No. **1.** 3¼ Inch Wheel, 3-16 x 1 Inch Strap, 10½ Inches Long . . Per Dozen Pairs $15 00
No. **2.** 3¾ Inch Wheel, 1-4 x 1 Inch Strap, 12½ Inches Long . . . . . " " 18 00

One Dozen Pairs in a Crate.

O. K.

Wilcox.

O. K.

Steel, Roller Bearing, Endless Run.

For all light doors.

Wheel 3¼ Inches Diameter, Steel Pendant 12½ Inches Long . . . . . Per Dozen Pairs $12 00

One Dozen Pairs in a Crate.

Wilcox Trolley.

Roller Bearing.

Designed especially for heavy barn, mill and fire doors. Have lateral adjustment and are suitable for doors from 2 to 3½ inches thick. Pendant 12 inches long, 4½ inches wide and 1-4 inch thick. Wheels 3 inches.

No. **125.** Hangers . . . . . Per Pair $6 00
Track. . . . . . Per Foot 50
Track Brackets . . . . . Each 60

HOUSE DOOR HANGERS.

Richards

New Cycle

Richards'.

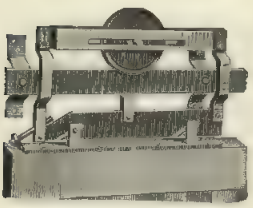
Steel, Single Track.

Full Set, for **Double** Doors, with **14** Foot Track	Per Set	$6 00
Half Set, for **Single** Doors, with **8** Foot Track	Per Half Set	3 00
Extra Track	Per Foot	09

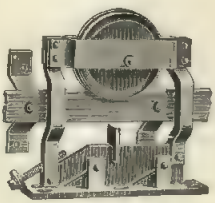
New Cycle.

Steel, Ball Bearing.

Full Set, for **Double** Doors, with **14** Foot Track	Per Set	$6 00
Half Set, for **Single** Doors, with **8** Foot Track	Per Half Set	3 00
Extra Track	Per Foot	09



Lane's Standard.



Lane's Ball Bearing.

Lane's Standard.

Full Set, for **Double** Doors, with **14** Foot Track	Per Set	$6 00
Half Set, for **Single** Doors, with **8** Foot Track	Per Half Set	3 00
Extra Track	Per Foot	09

Lane's Ball Bearing.

Full Set, for **Double** Doors, with **14** Foot Track	Per Set	$7 50
Half Set, for **Single** Doors, with **8** Foot Track	Per Half Set	3 75
Extra Track	Per Foot	09

ENTERPRISE RAPID GRINDING AND PULVERIZING MILLS.

FIG. 10145.

PRICE FIG. 10145.

Weight, lbs.	6
Height, inches	9
No. 10, each	$1 25

FIG. 10146.

PRICE, FIG. 10146.

Weight, lbs.	6
Height, inches	9
No. 10, each	$1 50

Packed 12 in a case.

FIG. 10147.

PRICE FIG. 10147.

Weight, lbs.	10
Height, inches	14
No. 1, each	$2 25

Packed 6 or 12 in a case.

FIG. 10148.

PRICE, FIG. 10148.

Weight, lbs.	17
Height, inches	18½
No. 20, each	$3 50

FIG. 10149.

PRICE FIG. 10149.

Weight, lbs.	20
Height, inches	24
No. 40, each	$4 50

PRICE, FIG. 10150.

Weight, lbs.	20
Height, inches	18
Diameter of fly wheel, inches	17
No. 2½, each	$4 00

FIG. 10150.

PRICES FIG. 10151

No.	Height, Inches.	Diam. of Wheels, Inches.	Weight, Lbs.	Capacity per hour, Ground, Pounds.	Each.
3	15	8½	5	½	$1 75
5	16	9½	9½	¾	3 50
6	17	12½	30	2½	8 10
7	17	17	60	10	11 40
9	24	19½	100	18	16 20

FIG. 10151.

PRICES, FIG. 10152

No.	Height, Inches.	Diam. of Wheels, Inches.	Weight, Lbs.	Capacity per hour, Ground, Pounds.	Each.
4	22	10½	28	½ lb.	$ 3 00
6	24	15½	85	¾ lb.	7 00
8	27	17	80	2½ lb.	9 00
10	28	19½	100	4½ lb.	21 00

FIG. 10152.

THE FAIRBANKS COMPANY

ENTERPRISE COFFEE MILLS.

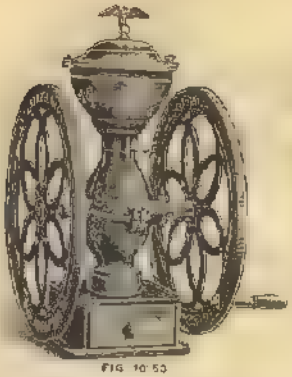


FIG. 10153.

PRICE, FIG. 10153.

No. 209, capacity of iron hopper 5 lbs. coffee, height, 33 inches when set, wheels diameter, weight 156 lbs., each. $24 00

Decorated pulleys 12 x 3 inches for power

Per pair $10 00

FIG. 10154.

PRICE, FIG. 10154.

No. 210, capacity of nickel plated copper 6½ lbs. of coffee, height, 42 inches, wheels 25 inches diameter; weight, 147 lbs., each $30 00

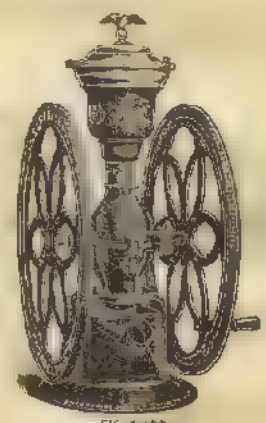


FIG. 10155.

PRICE, FIG. 10155.

No. 212, capacity of iron hopper, 10 lbs. of coffee, height 43 inches, wheels, 31 inches diameter, weight, 211 lbs. each $30 00

Decorated pulleys 12 x 3 inches for power

Per pair $15 00

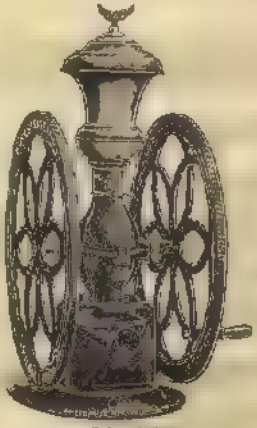


FIG. 10156.

PRICE, FIG. 10156.

No. 214, capacity of nickel plated copper 7½ lbs. of coffee, height 43 inches, wheels 31 inches diameter, weight, 198 lbs., each $35 00

ENTERPRISE RAPID GRINDING AND PULVERIZING MILLS.

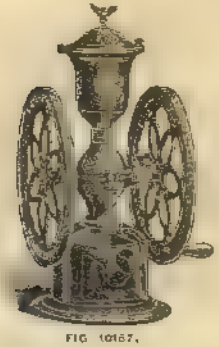


FIG. 10157.

PRICES, FIG. 10157.

No. 512, capacity of iron hopper, 3 lbs. of coffee, height 31 inches, wheels 17 inches diameter weight 60 lbs. each $13 50

No. 713, capacity of iron hopper, 5½ lbs. of coffee height, 35 inches, wheels 12 inches diameter weight, 90 lbs. each 17 00

FIG. 10158.

PRICES FIG. 10158.

No. 514 capacity of nickel plated hopper 3 lbs. of coffee, height 31 inches wheels 17 inches diameter weight 65 lbs. each $17 50

No. 714 capacity of nickel plated hopper 5 lbs. of coffee height 35 inches wheels 20 inches diameter, weight 90 lbs. each 22 00

FIG. 10159

PRICE, FIG. 10159

No. 715 capacity of iron hopper 8½ lbs. of coffee, height, 5 feet wheels 25 inches diameter weight 170 lbs., each $32 50

Decorated pulleys for Mills Nos. 513, 714, 10 and 718, 14 x 14½ inches, for power

Per pair $ 4 00

FIG. 10160

PRICE, FIG. 10160

No. 716 capacity of nickel plated hopper 8 lbs. of coffee, height 5 feet wheels 25 inches diameter, weight 184 lbs. each $38 50

ENTERPRISE RAPID GRINDING AND PULVERIZING MILLS.

FIG. 10161

PRICE, FIG. 10161

No. 12, capacity of iron hopper, 5 pecks; over heights, 35 inches; when open, 50 inches; diameter, weight 11 lbs., each $24 00

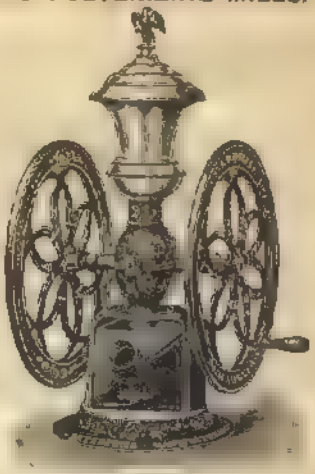


FIG. 10162

PRICE, FIG. 10162

No. 3 capacity of wheat, rated in barrels per 24 hrs., of meal; height, 61 inches; wheels, 24 inches diameter; weight 150 lbs., each $30 00

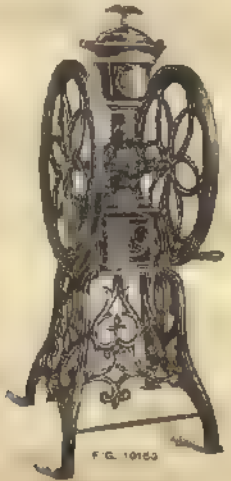


FIG. 10163

PRICE, FIG. 10163

No. 10, capacity of iron hopper, 4 pecks; over heights, 5 feet 2 inches; wheels, 8 inches diameter; weight, 200 lbs., each $16 00

Decorated pulleys
18 x 2 inches for power
Per pair .. $14 40

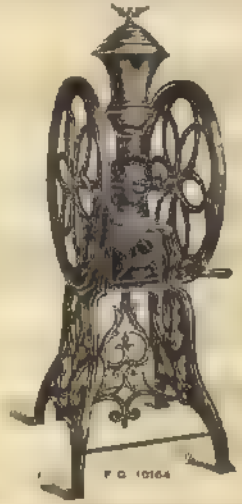


FIG. 10164

PRICE, FIG. 10164

No. 10, capacity of wheat, rated barrels per 24 hrs., of meal; height, 5 feet 5 inches; wheels, 24 inches diameter; weight, 200 lbs., each $16 00

ENTERPRISE COFFEE MILLS.

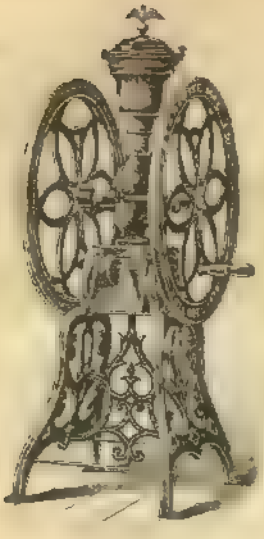


FIG. 10165.

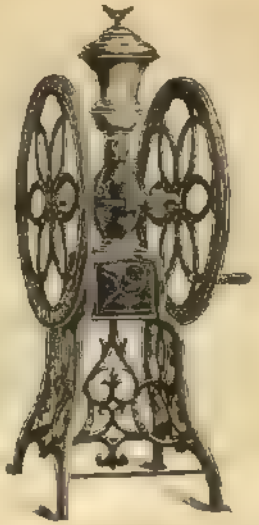


FIG. 10166

DESCRIPTION FIGS. 10165 AND 10166.

The No. 216 and 218 Mills when run by power can be specially fitted with our patented Enquid" grinders (pulverizing or granulating), and it is hereby necessary to specify the purpose for which Mills are to be used and how fine the material is to be ground. When no specifications are made, each Mill will be fitted with grinders for granulating coffee. Decorated pulleys, 2½ x 3 inches, $10.00 per pair. Minimum horse power required, ½.

Speed: Granulating, 300 revolutions per minute; pulverizing, 75 revolutions per minute.

Product: Granulating, 10 pounds of coffee per minute; pulverizing, 2½ pounds of coffee per minute.

PRICE, FIG. 10165

No. 216, capacity of iron hopper, 6½ lbs. of coffee, height 7 feet 8 inches, wheels 3 feet diameter; weight, 320 lbs. each $47 50

PRICE, FIG. 10166

No. 218, capacity of nickel plated hopper, 7½ lbs. of coffee, height 5 feet 9½ inches, wheel, 34 inches diameter; weight, 307 lbs. each $52 50

LANTERNS AND LAMPS.

Diamond Driving Lamp

Dash Clamp

Which accompanies each Diamond Driving Lamp

These lamps have new combination lens which greatly increases the volume of light.

Cadet Lantern

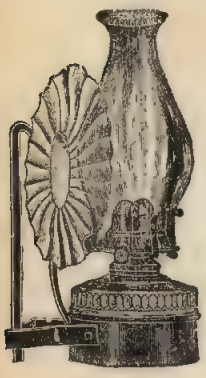
No. 606.

Regular pattern

Bulls-Eye Police Lantern.

"MASCOT" LAMPS.

8 inch reflector



No. 26.

Frame and reflector only. Steel frame. Nicely japanned.

Per gross . . . . . $.

Case lots, 12 dozen

Weight, 90 lbs.

HAM'S "DIAMOND"
"Cold Blast" Tubular Driving Lamp.

Driving Diamond Lamp Burner. ½ inch "O" Wick. 4¾ inch Heavy Beveled Glass Height of lamp, 10 inches. Fount holds sufficient oil to burn 29 hours

Price . . . . . Per doz. $.....

"CADET" BRASS LANTERN.

A neat little brass lantern for household use and handy for many purposes when a large light is not required A first class skating lantern

½ inch Wick. Cadet Globe. Height of lantern with bail down, 7 inches.

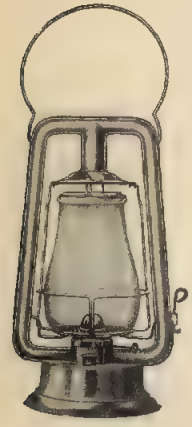
Price . . . . . Per doz. $.....

BULLS-EYE POLICE LANTERN—Regular.

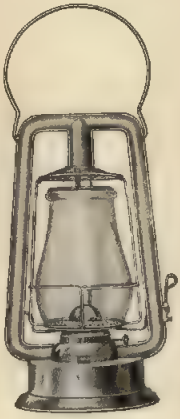
Regular 8 inch Police lantern. Burns "Signal" oil.

No. 606. Japanned . . . . . Per doz. $. . ...

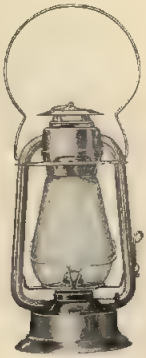
LANTERNS.



No. 0 Clipper Lantern.



No. 2 Clipper Lantern.



No. 2 Cold Blast Lantern.

HAM'S "CLIPPER"

No. 0 "Hot Blast" Tubular Lantern.

No. 1 Hot Blast Burner. 5/8 inch "A" Wick. No. 0 Tubular globe.

Height of lantern with bail down, 13½ inches. Fount holds sufficient oil to burn 22 to 25 hours.

Clear Globes.. .. ..Per doz. $ Ruby Globes.. .. ..Per doz. $. . ..

HAM'S "CLIPPER"

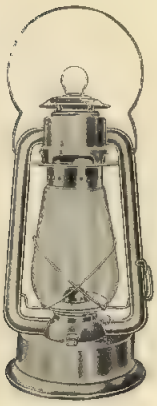
No. 2 "Hot Blast" Tubular Lantern.

No 2 Hot Blast Burner. 1 inch "B" Wick. No. 0 Tubular Globe.

Height of lantern with bail down, 14 inches. Fount holds sufficient oil to burn 20 to 23½ hours.

Price .. ..

LANTERNS.



No. 22 Cold Blast Lantern.

No. 15 Clipper Dash Lamp.

No. 2 Clipper Dash Lamp.

HAM'S "RELIABLE"

No. 22 "Cold Blast" Tubular Lantern—with Large Fount.

No. 2 Cold Blast Burner. 1 inch "B" Wick. No. 0 Cold Blast Globe.

Height of lantern with bail down, 18½ inches. Fount holds sufficient oil to burn 26 to 30 hours.

Price . . . . . Per doz $ .....

HAM'S "EMPEROR"

No. 15 Clipper "Hot Blast" Tubular Dash Lamp.

No. 1 Hot Blast Burner. ⅝ inch "A" Wick. No. 0 Tubular Globe.

Height of lamp with bail down, 13½ inches. Fount holds sufficient oil to burn 22 to 25 hours.

Price . . . . . Per doz. $.....

HAM'S "EMPRESS"

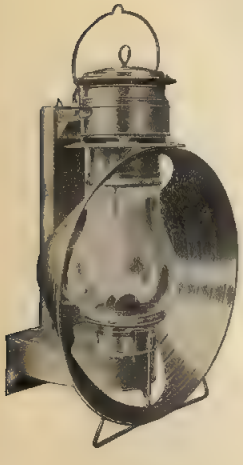
No. 2 Clipper "Hot Blast" Tubular Dash Lamp.

No 2 Hot Blast Burner. 1 inch "B" Wick. No 0 Tubular Globe

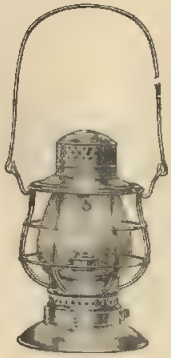
Height of lamp with bail down, 14 inches. Fount holds sufficient oil to burn 20 to 23½ hours

Price . . . . . Per doz. $.....

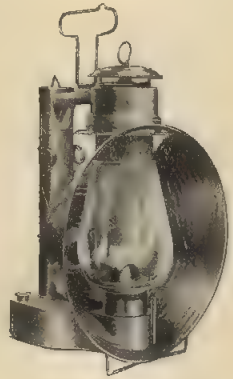
LANTERNS.



No. 40 Mammoth Cold Blast Searchlight.



No. 39 Railroad Lantern.



No. 20 Cold Blast Searchlight.

HAM'S "MAMMOTH"

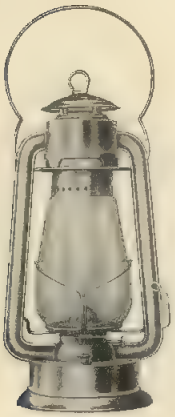
No. 40 "Cold Blast" Tubular Searchlight.

No. 9 Burner. 1½ inch "D" Wick. No. 4 Globe

Height of lamp with bail down, 22 inches. Fount holds sufficient oil to burn 37 to 45 hours

Price.. .. .. .

LANTERNS.



No. 00 Gem Cold Blast Lantern.

No. 17 Cold Blast Dash Lamp.

No. 9 Cold Blast Globe Street Lamp.

HAM'S "GEM"

No. 00 "Cold Blast" Tubular Lantern.

Gem Cold Blast Burner. 5/8 inch "A" Wick. Gem Cold Blast Globe.

Height of lantern with bail down, 11¾ inches. Fount holds sufficient oil to burn 14 to 16 hours.

Price .....Per doz. $.....

HAM'S "STERLING"

No. 17 "Cold Blast" Tubular Dash Lamp.

No. 2 Cold Blast Burner. 1 inch "B" Wick No. 0 Cold Blast Globe

Height of lamp with bail down, 15 inches. Fount holds sufficient oil to burn 23 to 26 hours

Price .....Per doz. $.....

HAM'S STREET LAMP

No. 9 "Cold Blast" Tubular Globe Street Lamp.

No 9 Cold Blast Burner. 1½ inch "D" Wick. No. 9 Globe.

Height of lamp, 25 inches. Fount holds sufficient oil to burn 25 hours.

Price .....Per doz. $. . .

Volo

Roller Bearing Sewing Machine.

TRADE MARK
Volo
REGISTERED.

This illustration shows the method of automatically raising the head of the **Volo** into position for operation.

Volo*

Roller Bearing Sewing Machine.

TRADE MARK
Volo
REGISTERED

The Noiseless Roller Bearing Stand is the most decided improvement that has been evolved in years. The old cone bearing stand—the later ball bearing stand, were well enough in their way and times, but in the all important feature of noiselessness and ease of running, they do not compare with the Improved Roller Bearing. The wheel runs on special steel, hardened perfectly ground and perfectly fitted bearings, cylindrical shaped. They are noiseless and their perfect fit insures and attains the acme of ease. In this connection is used our new universal steel ball and socket bearing Pitman, which is non-binding, therefore eliminating a serious objection common to stands of different construction. The castings used are <> in shape, black japanned, decorated with gold stripes and varnished. The shape of the castings add greatly to the strength and is beautiful in effect.

The Leg Brace serves two purposes, as its name implies; it braces the legs firmly and is shaped in such a way as to hold any surplus oil that may be put on the treadle bearings, thereby preventing it from falling on the carpet or floor.

The Dress Guard is of a very neat design, and firmly attached to the stand, conforming in design with the shape of the casting used in the leg.

The material used in making our stand castings is of the highest grade iron obtainable. It not only makes a durable stand, but produces the smoothest casting possible and enables us to offer the best finished stand used on any Sewing Machine in the world. The design is pleasing in appearance and the same pattern is carried out on each piece.

Finish of the Stand.—Owing to the smoothness of the material, it is capable of receiving a very fine finish without any rough places.

The steel casters are brass plated and well polished. The treadle is hung on adjustble steel cone shaped bearings and all wear can be easily taken up.

The oil holes for these treadle bearings are supplied with steel spring covers, which protect them from dust. When oiling is necessary the holes are exposed by turning the spring covers to one side.

The Attachments are guaranteed without reserve to be superior to those of any other make. Our make of attachments are the only ones in the market that are warranted steel throughout. Other so-called steel attachments are made of brass, nickel plated. Each and every piece of our attachment sets is made of solid steel, polished and nickel plated. A set as supplied without extra charge consists of the following: Ruffler, Tucker, Binder, Braider Foot, Shirring Slide Plate, Four Hemmers of assorted widths, Quilter, Foot Hemmer and Feller.

The Accessories supplied include Twelve Needles, Six Bobbins, Oil Can (filled with oil), Large and Small E. C. Simmons' Blue Brand Screw Drivers, Sewing Guide, Thread Cutter, Certificate of Warranty, valid for five years and an illustrated Instruction Book.

The Belt is round, ⅜ inch in diameter and is fitted with the Abney Patent Automatic Coupler and Shortener. With it the Belt can be shortened instantly by turning the Coupler to the right, which action cuts the Belt to the desired length

Volo*

Roller Bearing Sewing Machine.

TRADE MARK:
Volo
REGISTERED.

This illustration shows a front view of the **Volo** open and ready for use. It gives a good view of the stand to which we have added many improvements over any other machine on the market.

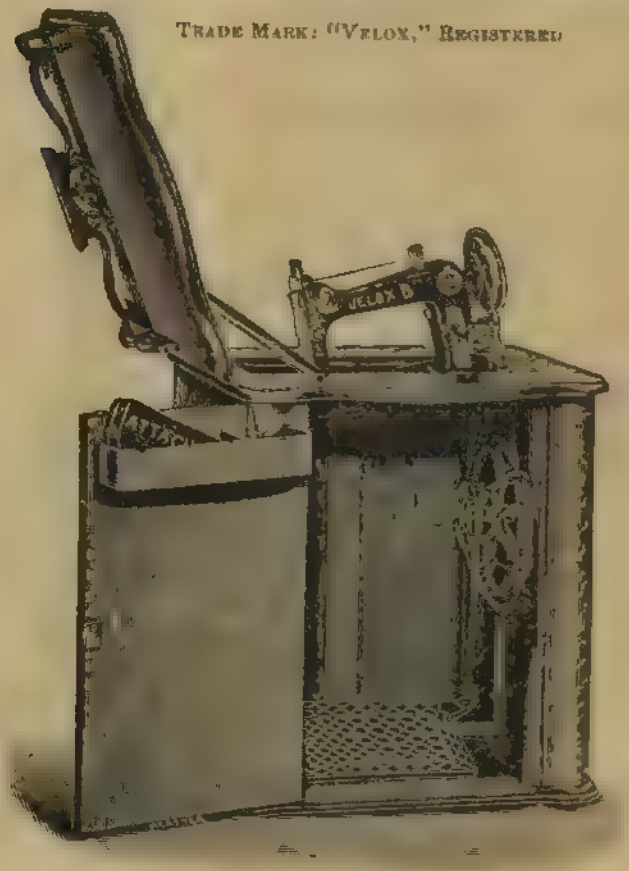
All Parts Interchangeable.

	EACH
No. VRB—Volo*	**$40.00**

Weight, Complete, about 108 lbs.; Crated, about, 140 lbs.

The "Velox B*" Sewing Machine.

TRADE MARK: "VELOX," REGISTERED



Open

Desk Cabinet, with Ball Bearing Stand.

The above illustration shows our No DCV Desk Cabinet Sewing Machine open, with the head partially raised, showing the automatic feature. The weight of the head being counter-balanced by that of the leaf, little or no effort is required to bring it into position, as the table on which the head rests is hinged at one end of the cabinet and rests upon a flange of the drop-leaf at the other.

The "Velox B*" Sewing Machine.

TRADE MARK:
S. H. Co.'s "VELOX,"
REGISTERED.

With Ball Bearing Stand and Automatic Head Lift.

No. DH104V—Five Drawers, ... $30.00

This is an **automatic-lift** drop head stand with an absolutely positive and easy action, accomplished with mechanism of extreme simplicity. When the table leaf is swung over for sewing, the head of the machine is automatically lifted to place and locked firmly, and when the leaf is closed, the head is lowered into the dust-proof receptacle provided for it. No device for a similar object has ever possessed a fraction of the ease and certainty of action which are the essential features of this construction.

The design of the woodwork is new, classic, elegant, artistically executed and exactly in line with the best modern ideas in high-class furniture. Nothing at all approaching it in artistic excellence has been associated with a sewing machine; it carries an air of dignified richness that can only be associated with superior quality.

The stand is made from the choicest cuts of quarter-sawed oak, hand-rubbed and polished, in one pattern only, with four round end drawers and a swell front center drawer, as shown.

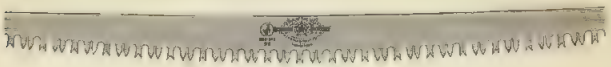
The castings are perfectly smoothed and coated heavily with full gloss black enamel. The belt wheel and pitman are fitted with anti-friction ball bearings which run about eighty per cent easier than any other form.

No other Sewing Machine is made like it or compares with it. Being built along new and original lines of distinctive individuality calculated to appeal to that class of patrons who always require the best, this Machine is without a rival—is strictly non-competitive.

Weight, complete, about 105 lbs.; Crated, about 128 lbs.

Transportation charges, both ways, must be paid by the customer returning one of these machines for adjustment

ATKINS CROSS CUT SAWS.



Star of the West.

Thickness, 17 Gauge on Back, 12 Gauge on Tooth Edge.

Width of 7 foot blade at center 5½ inches, 8½ foot blade 6 inches.

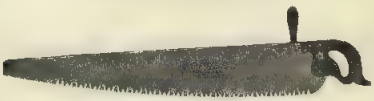
Length, Feet..	6	6½	7	7½	8	8½	9	9½	10
List, Each	$6 00	6 50	7 00	7 50	8 00	10 20	10 80	11 40	12 00

Howatson.

Thickness, 17 Gauge on Back, 12 Gauge on Tooth Edge.

Length, Feet..	6	6½	7	7½	8	8½	9	9½	10
List, Each	$6 00	6 50	7 00	7 50	8 00	10 20	10 80	11 40	12 00

ONE MAN SAWS.

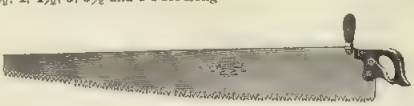


Champion Tooth.

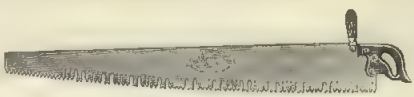
H. B. Curtis & Co. 3, 3½, 4, 4½, 5 and 5½ Feet Long . . Per Foot $0 58
Disstons. 3, 3½, 4, 4½ and 5 Feet Long . . . " 60

Tuttle Tooth.

Atkins. 3, 3½, 4, 4½, 5, 5½ and 6 Feet Long . . . Per Foot $0 60



Simonds No. 111. 3, 3½, 4, 4½, 5, 5½ and 6 Feet Long Per Foot $0 05



Perforated Lance.

Simonds No. 222. 3, 3½, 4, 4½, 5, 5½ and 6 Feet Long . Per Foot $0 60
Atkins Victor. 3, 3½, 4, 4½, 5, 5½ and 6 Feet Long . " 64
Disstons. 3, 3½, 4, 4½ and 5 Feet Long. . . . . " 70

SIMONDS CROSS CUT SAWS.

No 530.

No. 521.

No. **530 Webfoot.** 18 x 13 Gauge. 5 to 8 Feet Long..... Per Foot $0 55

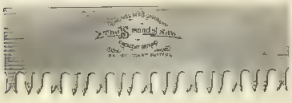
No. **521 Eclipse.** 18 x 13 Gauge. 5 to 8 Feet Long .... " 80

No. 522.

No. 520.

No. **522 Hoo Hoo.** 18 x 13 Gauge. 5 to 8 Feet Long .....Per Foot $0 80

No. **520 Chinook.** 18 x 13 Gauge. 5 to 8 Feet Long..... " 80



No. 500.

No 510.

No. **500 Crescent, Regular.** 17 x 12 Gauge....Feet Long 5 to 8 8½ 9 10
Per Foot..... ..... $1 00 1 20 1 35 1 50

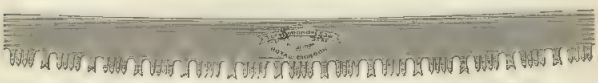
No. **510 Crescent, Falling.** 17 x 12 Gauge Feet Long 6 to 8 8½ 9 9½ to 16
Per Foot..... $1 00 1 20 1 30 1 50

No. 501.

No. 512.

No. **501 Crescent, 4 Tooth.** 17 x 12 Gauge. 6 to 8 Feet Long .....Per Foot $1 00

No **512 Crescent, 4 Tooth Falling.** 17 x 12 Gauge. Feet Long 6 to 8 8½ 9 10
Per Foot $1 00 1 20 1 35 1 50



No. **513 Royal Chinook, Falling.** 17 x 12 Gauge . Feet Long 6 to 8 8½ 9
Per Foot $1 00 1 20 1 35

HAND, PANEL AND RIP SAWS.

Disston's No. 7.

Cast Steel, Beech Handle, Polished Edge, Four Improved Screws, Grained Blade.

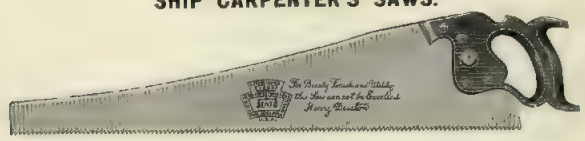
	16	18	20	22	24
Panel, Inches					
Per Dozen	$13 00	14 00	16 00	18 00	19 00
Hand, Inches				26	30
Per Dozen				$20 00	27 00
Rip, Inches				28	30
Per Dozen				$23 50	27 00

Disston's No. D8.

Spring Steel, Skew Back, Apple Handle, Polished Edge, Five Improved Screws.

	16	18	20	22	24
Panel, Inches					
Per Dozen	$14 75	16 25	18 00	20 00	21 50
Hand, Inches				26	30
Per Dozen				$22 50	28 50
Rip, Inches					28
Per Dozen					$25 50

SHIP CARPENTER'S SAWS.

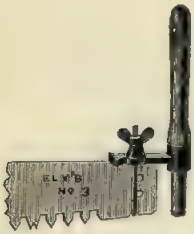


Disston's No. D8.

A Narrow Hand Saw. Suitable for Cabinet Makers, Pattern Makers, etc., where a Narrow Saw is desired. With the exception of being Narrow, the description of this Saw is the same as Disston's Regular D8 Hand Saw. **26** Inches Per Dozen $22 50

All Above, One-third Dozen in a Box.

SAW HANDLES.



No. 3.

No. 11.

Cross Cut.

No. **3.** One direction only	Per Dozen	$3 25
No. **11.** Reversible	"	4 00

Simonds.

One Man Cross Cut.

Supplementary One Man

Cross Cut.

Simonds. Reversible Guard	Per Dozen	$9 00
One Man Cross Cut	"	4 00
One Man Supplementary	"	2 25

One Man Handles, One Dozen in a Box

Hand.

No. **2.** Full Size, Beech, Varnished Edges, for **26** Inch Saws	Per Dozen	$1 40
No. **4.** Small Panel, Beech, Varnished Edges, for **16** to **30** Inch Saws	"	1 35
No. **7.** Disston's, Beech, for **26** Inch Saws	"	2 50
No. **D8.** Disston's, Apple, for **26** Inch Saws	"	4 00
No. **12.** Disston's, Carved Apple, for **26** Inch Saws	"	6 50
No. **120.** Disston's, Carved Apple, for **26** Inch Saws	"	5 00

One Dozen in a Box.

Compass.

Beech	Per Dozen	$1 10

One Dozen in a Box.

ATKINS CROSS CUT SAWS.

Tuttle Tooth.

Thickness, 18 Gauge on Back, 14 Gauge on Tooth Edge.

6, 6½, 7, 7½ and 8 Feet Long . . Per Foot $0 56

Lance Tooth. Not Perforated.

Thickness, 18 Gauge on Back, 14 Gauge on Tooth Edge.

6, 6½, 7, 7½ and 8 Feet Long . . Per Foot $0 56

Victor. Lance Tooth Perforated.

Thickness, 18 Gauge on Back, 14 Gauge on Tooth Edge.

6, 6½, 7, 7½ and 8 Feet Long . . Per Foot $0 60

Dexter.

Thickness, 18 Gauge on Back, 14 Gauge on Tooth Edge.

6, 6½, 7, 7½ and 8 Feet Long . . Per Foot $0 80

Tyee.

Thickness, 16 Gauge on Back, 13 Gauge on Tooth Edge.

6, 6½, 7, 7½ and 8 Feet Long . . Per Foot $0 80

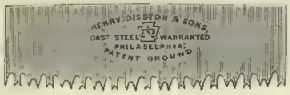
Pacifico.

Thickness, 16 Gauge on Back, 12 Gauge on Tooth Edge.

Length, Feet ..	6	6½	7	7½	8	8½	9	9½	10
List, Each ...	$6 00	6 50	7 00	7 50	8 00	10 20	10 80	11 40	12 00

DISSTON'S CROSS CUT SAWS.

Narrow Champion. 5, 5½, 6, 6½ and 7 Feet Long. . Per Foot $0 35



Regular Champion. 5, 5½, 6, 6½ and 7 Feet Long .....Per Foot $0 54

Tenon. 4, 4½, 5, 5½, and 6 Feet Long .....Per Foot $0 58

Oregon Perforated. 17 x 13 Gauge. 6, 6½ and 7 Feet Long. . Per Foot $0 75

Oregon. 17 x 13 Gauge. 6, 6½ and 7 Feet Long.....Per Foot $0 75

Nevada. 17 x 13 Gauge. 6, 6½, 7 and 7½ Feet Long. .....Per Foot $1 00

Thickness 17 x 13 Gauge, 4 Teeth and Raker, Even Thickness on Tooth Edge and Thin on Back, giving the maximum amount of clearance without sacrificing elasticity and stiffness Has larger clearance space between Teeth and Raker than any Saw on the market. Made especially for Pacific Coast Timber.

Cougar Cross Cut. 6, 6½, 7 and 7½ Feet Long.. ..... Per Foot $ 1 50
Cougar Falling. 7, 7½, 8 and 8½ Feet long..... ... . " 1 50

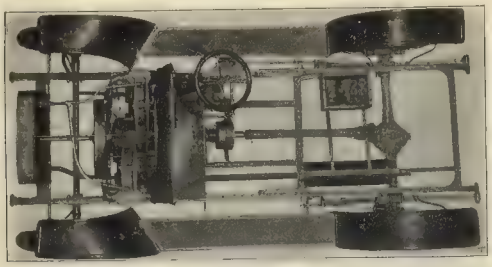
Jackson Model "G," 1908, left side of motor, showing the intake and exhaust piping and fan, which is belt driven, and is on ball bearings. The pistons are plain, slightly tapered, smallest at top, free in the cylinders when cold, have three rings above the pin, 45 degree lap, pinned to piston. The rods are hollow, steel, hardened and ground 1¼ in. diameter, fixed in pistons. The rods are H-section Manganese bronze, top ends split and fitted with two pinching screws to take split white bronze bushes on the piston pins. The wrist ends of the rods have hinged caps, adjustment is made by studs, nuts, check nuts and split pins, and are babbitted with white bronze on the wrists, same lining used for crank shaft boxes.

engagement is effected by four toggle-actuated bell cranks, having temper screws in their effective ends. This clutch is well protected on its open side, though not wholly dust proof, and the motor and clutch are fully protected by the pressed metal dust shield under the entire propulsion system. This shield is an absolute necessity and has been approximated in various forms of blankets and tarpaulins, all unsightly and frail, and only partially effective. This pressed steel Jackson shield is a neat, substantial and thoroughly effective arrangement, very durable, not at all in the way, and fully protecting everything from dust, gravel and road drift, which are so destructive to working machinery, and also catching all oil and other drippings from the motor and machinery throughout.

The sliding gear is three speeds forward and reverse, selective type, side shaft running with line shaft, all in plain bronze bearings, all gears steel and case hardened, and running in an oil pool in the lower member of the aluminum gear casing.

The propeller shaft is cased in a steel tube up to the telescoping front squared end, which telescopes in the rear Spicer universal joint member. The regular ordinary brake drum 8 in. diameter by 2 in. face, fibre lined brake band, is fixed on the front member of the

Jackson 1908 Model "G," right side of motor and control. This illustration shows the fan, cylinders and front board, with the levers and pedals.

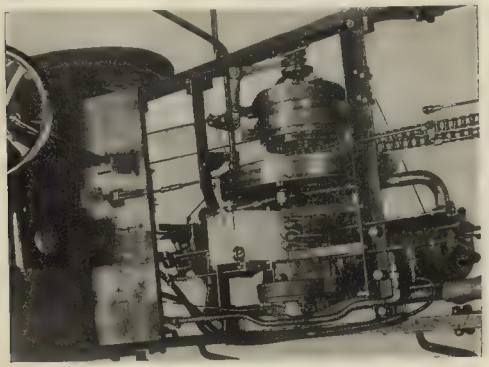


Model D Jackson, chassis plan; 2-cylinder opposed engine, 5¼x5, placed forward under hood, drive by shaft through two-speed forward reverse planetary change gear.

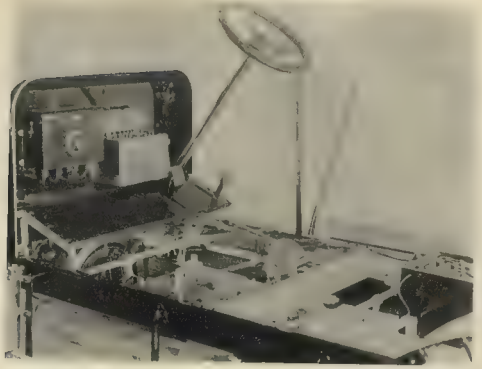
ing wheel for the full sweep of the front wheels. Models "D" and "G" take 2¼ turns for the front wheel full range. This is the largest movement of the hand yet recorded by the writer. These cars steer easily and well in every particular, and the large steering wheel movement is said by the Jackson testers to be perfectly satisfactory. The movement of the hand wheel should, for all kinetic and machine considerations be made as great as possible without inconvenience to the driver.

MODEL "D" ENGINE.

This two-cylinder opposed type engine, with 5¼ in. bore and 5 in. stroke, is placed crosswise under the hood and drives through a shaft. The crank shaft is drop forged from special high carbon steel, made exceptionally large and strong and carefully ground true to size. The pistons, cylinders and crank case are made from special semi-steel castings, giving the maximum strength for weight of material. Pistons and cylinders are carefully ground and lapped to fit; all



Jackson 1906 Model "C" plan of motor and control. The planetary gearing stayed together very well in 1905, but for 1906 the addition to piston area was not by increasing the face of all gears. The crank box pressure oiler used in 1905, while perfect in action if clean, had very small power, only the gravity of an inch or two of head to make it deliver oil, and has been replaced by the Lill Precision arrangement, placed on top, which has a good strong oil pressure to displace oil lead obstructions, and has no valves whatever, and hence requires no valve adjustment.



Jackson Model "G" footboard front board rear and control. The outside lever stands idle to front and is pulled to rear to first disengage the clutch and there apply the emergency rear hub internal brake shoes expanding gray iron, and fitted metal to metal. The right hand pedal does nothing except to apply the fibre faced external brake band to the emergency brake drum on the line shaft in rear of the change gear casing. The inside pedal is pushed forward to first disengage the clutch and then release the latch which locks the inside vertical lever so that speed changes can be made by the lever handling. The change gear lever in neutral, when vertical, is on high gear at forward extreme, first station to rear is intermediate gear, second is low gear and extreme rear position gives the reverse. The spark and throttle are controlled by small levers, notched segment retained on top of the hand wheel. The small plunger pedal at for the muffler cut out. The twenty-gallon fuel tank is carried under the driver's seat on the two brackets seen, one on each side, supported on the rear transmission cross girt, which is heavy and substantial. The Kingston muffler is fitted and is a perfect silencer on the car, with so little back pressure that the exhaust can hardly be heard where the cut-out is opened.

Spicer universal joint on the line shaft.

CONTROL.

This is most simple, Model "G" having two vertical hand levers, two vertical pedals and two small hand levers, notched segment retained on top of the hand wheel, for spark and throttle regulation, all as shown in the control illustration.

Model "D," two cylinder bevel gear, has one outside hand lever, two vertical pedals and two hand levers for spark, and spark and throttle control under the hand wheel.

RADIATION.

The water circulation is thermal, purely. In 1905 the Jackson cars were fitted with a large capacity, three-pinion water-force pump, which circulated the water more rapidly than the radiator would cool it and so supplied the water jackets with high temperature cooling water, under certain conditions, low speed of car with high motor speed, which reduced the radiator efficiency while giving the greater volume of heat to be dissipated. This large-capacity water pump circulation made the radiator boil. By cutting out the pump it was found that the thermal circulation only, by simply slowing the passage of the water through the radiator made the radiator much more efficient, so that under no combination of effects could the radiator be made to boil the water, and the increased heat of the water when the motor was pushed increased the rapidity of water circulation, all exactly as seemed desirable. Extended testing without the water pump gave continued favorable results, and for 1906 the Jackson company are fitting no water-circulating pumps whatever.

IGNITION.

Jump spark plugs are used with storage batteries on Models "D" and "G," and dry cells on Model "C." The wiring is carefully supported and is accessible.

Hill's Precision Oilers are fitted to all three of the 1906 Jackson cars, and particular attention has been given to placing the oil leads, which are symmetrical in appearance, and well carried.

Pressed steel front boards are fitted to Models "D" and "G" and are made to house the oiler and coil box. Model "C" has a flat front board, which carries the coil box, the oiler being placed on top of the crank box. All front boards are fixed to the chassis frames, so as to permit driving without the body being on the car.

STEERING ACTION.

This is the same for Models "G" and "D," a multiple thread hard steel worm engaging a bronze worm gear sector.

In Model "C" the Brown-Lipe internal worm surrounding the worm gear sector is used.

Model "C" takes one full turn of the steer-

Jackson two-cylinder bevel gear drive, new Model "D," 1906; wheel base 100 in., gauge 56 in., wheels 32x3½ in., pressed steel chassis frame; motor, a pair of horizontal opposed, four-cycle, water-cooled cylinders, 5¼x5, set cross in front; improved planetary two-speed and reverse change gear and bevel gears to rear axles; detachable tonneau body to seat five passengers; weight about 1950 lbs.; price $1900, including mats, horn, tools and five lamps, ready for extended touring. This is an entirely new design, with several new features of motor construction, abundant power and only moderate weight, with ample room for five passengers. This car is of fine appearance and is capable of high speed with full load. It is only 106 in. wheel base and has a detachable tonneau, so that it can well be used as two-seated car, a large runabout, in crowded streets.

the machinery is good and the finish is excellent, giving the cars a fine appearance, and the three Jackson models here described give a sufficient variety to meet the requirements of agents desirous of handling the product of one manufactory only.

THE WHEELS.

The three wheel diameters used are 34, 32 and 30 ins., with 4-in. and 3½-in. tires. All front wheels are on ball bearings. All rear axles are on Hyatt roller bearings, with adjustable ball bearing thrusts. The balance gears are all Brown-Lipe, spur. Models "D" and "G" have the driving wheels fixed to the tapered axle ends with keys and nuts. In Model "C," the axle ends are squared, and the square-eyed hubs are pin retained.

Struts are used in Model "C," chain-drive, only. Models "D" and "G," bevel gear driven, do not use struts in any form, but depend on the springs for pushing the car.

TORSION RESISTANCE.

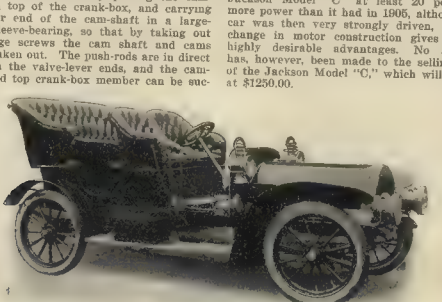
Torsion of the rear axles is also resisted by the springs. The strut and torsion arm were given all manner of shapes and placings, and could never be made right by anyone, simply because, as is now generally recognised, they were worse than needless, as, except in case of the chain-drive, the supposed functions of the strut and torsion-arm are better performed by the rear half-elliptic springs alone. The springs are all half elliptics. Model

Jackson 1906 two-cylinder, chain drive Model "C"; wheel base 90 in., gauge 56 in., wheels 30x3½ in. Channel steel chassis frame; motor, a pair of horizontal opposed cylinders, four cycle, water-cooled, 5x4½ in. set lengthwise of car, planetary speed change, two forward speeds and reverse, chain to rear axles, detachable tonneau body, side entrance, seats for five passengers; weight 1930 lbs.; price $1750, including mats, horn, tools and three oil lamps. This car is improved for 1906 by added piston area, giving about 20 per cent. more power than its highly satisfactory 1905 prototype. The value of ample piston area has not been hitherto fully appreciated by automobile constructors, who were satisfied with good hill climbing power and high speed on the level. The 1906 Jackson Model "C" was powerfully driven, was a good hill climber and a very speedy car on country roads. The 1906 increase of piston area not only gives more power on hill-climbing and more heavy-road speed on the level, but makes the motor more economical in fuel consumption on level good roads, where the chance is closely throttled on the high gear and the compression is consequently low. It is expected this 1906 Jackson Model "C" will prove even more attractive to purchasers than the 1905 car, for which orders exceeding the factory capacity were written.

Three Jackson 1906 Cars.

HUGH DOLNAR.

The Jackson Automobile Company, Jackson, Mich., U. S. A., having done a very successful business in 1905 with a single model of motor car, has extended its line of production, and will offer two additional models for 1906, a new Model "G" 4-cylinder, vertical motor, cylinders 5x5, three speeds forward and a reverse sliding gear, with bevel gear to the rear axles, listed at $2500.00, and a new Model "D," a lighter car, planetary two speeds and reverse change gear and bevel gear to rear axles, driven by a pair of 5¼x5 horizontal opposed cylinders set crosswise in front, listed at $1500.00, and will continue the very satisfactory 1905 Model "C," driven by a pair of horizontal opposed cylinders set lengthwise of the car, planetary change gear and chain drive to the rear axles. The 1905 5x5 cylinders for this last car have been enlarged to 5¼x5 for 1906, and have been greatly improved by placing the camshaft on top of the crank-box, and carrying the outer end of the cam-shaft in a large-flange sleeve-bearing, so that by taking out the flange screws the cam shaft and cams can be taken out. The push-rods are in direct line with the valve-lever ends, and the cam-cover and top crank-box member can be successively removed, so as to wholly disassemble the motors without disturbing the cylinders.



Jackson Model "G," 1906, 7-passenger touring car. Wheel base 108 in., gauge 56 in., wheels 34x4 in., 5x5, sliding gear, three speeds forward and a reverse, bevel gear to rear axles. Side entrance tonneau body, built-in seats for five passengers and folding seats for two in rear of driver's seat; weight 2500 lbs.; price $2500, including mats, horn, tools and five lamps, ready for extended touring.

In Model "D," 2-cylinder bevel gear, the two speeds forward and a reverse planetary change gear has been greatly improved, as is fully shown in the sectional illustration, so that the planet pinions are stationary in respect to the casing when on the high gear, as usual, and also so that no sudden stress is thrown on the change gearing in changing from low to high gear. Planetary change gear failure is not unknown, and the breakage of the driving pinion, which is the common form of failure, is caused by the sudden acceleration in changing from low to high gear, which makes a virtual blow on the driving pinion tooth engaged, and this causes the breakage. In the improved Jackson 1906 planetary gear construction, friction disks are applied at each end of a planetary gear member, seven disks in all, making a very soft and gradual engagement, no matter how rapidly it is applied, and also vastly reducing the lever impulse required to effect the engagement.

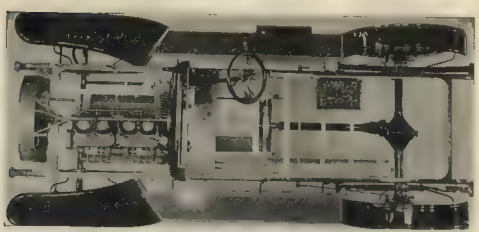
The planetary brake-bands will be of bronze, fitted metal to metal in Model "D," while remaining fibre-lined, as in 1905, in the Jackson Model "C." This car proved so wholly satisfactory in 1905 that the only changes thought advisable for 1906 are the increase of the cylinder bore from 5 to 5¼ ins. and the placing of the cam-shaft on top of the crank-box, with the specified construction detail changes, for more ready assembling and disassembling.

The increase in cylinder bore gives the 1906 Jackson Model "C" at least 20 per cent. more power than it had in 1905, although the car was then very strongly driven, and the change in motor construction gives several highly desirable advantages. No addition has, however, been made to the selling price of the Jackson Model "C," which will remain at $1250.00.

Models "C" and "D" will be fitted with detachable tonneau side-entrance bodies, both for five passengers. The 4-cylinder 1906 new Model "G" will have a built-in side-entrance tonneau body, with stationary seats for five passengers, and, in addition, two folding seats are hinged at the back of the front seat, to give seven passengers room when desired.

The Jackson factory capacity has been and is being greatly increased, so that it is expected to build at least three times as many cars in 1906 as were turned out in 1905, with much less contracting outside, the Jackson plant now being equal to the construction of all the 1906 motors and planetary change gears on its own premises.

All the Jackson cars are well upholstered with the best materials, the workmanship of



Jackson Model G, 1906 chassis plan. The chassis frame is 152 in. eye to eye in length and is 36¼ in. wide, parallel. The support and placing of the sub-frame is shown in this and the detail views of this new Jackson car. This illustration shows the symmetrical oil lead placing and accessibility of wiring.

"G" has front springs, 44x2 ins., seven leaves, perched 2 ins. forward of centre, rear springs 46x2 ins., seven leaves, perched in the middle.

Pressed steel frames, channel section in all members, cold riveted, are used in Models "D" and "G."

Model "C" has a channel steel chassis frame, mitered corners, with heavy angle-steel corner reinforcing, hot-riveted.

MOTOR PLACING.

In Model "G" the 4-cylinder motor and sliding gear speed change are carried on a depressed channel-steel sub-frame, with one Spicer universal joint to the propeller shaft.

In Model "D" the crosswise two-cylinder motor has the cylinder heads each fixed at one point to the lower channel section side-frame member, and the transmission casing, bolted to the crank box of the motor, is supported on a chassis frame depressed cross member, making a three-point motor assemblage fixing to the chassis frame, also with one Spicer globe joint to the propeller shaft.

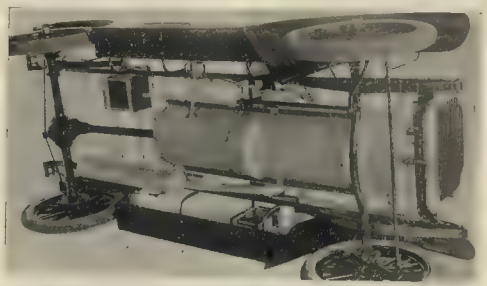
In "Model C" the cylinders are placed lengthwise and fixed under two angle steel cross girts. The Model "C" struts have flat joints to the axle sleeve, and are screw adjusted with globe joints on the chassis frame.

THE MODEL "G" FOUR-CYLINDER MOTOR.

This is a very powerful engine, with four cylinders, 5¼x5 in., 65 lbs. compression, giving ample power for the high gear drive when closely throttled. The carburetor is a standard float feed, not described in detail. The arrangement of the intake and exhaust piping is clearly shown in the illustration, and permits ready placing and displacing.

CLUTCH.

This is a five disk multiple, two bronze disks between three grey iron surfaces. The



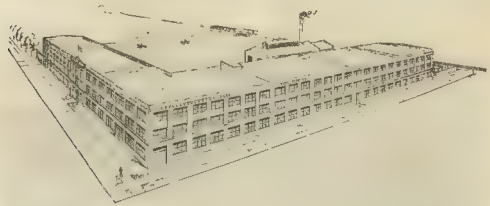
Jackson Model "G," 1906, chassis underside, showing Jackson pressed metal motor and transmission shield. The shield form is clearly shown in this illustration; this first shield had just been placed when this picture was taken, and the drain cock, in the bottom of the fly wheel pit, had not been placed, and does not show here. The shield is formed up by hand, over a gray-iron forming block, and is composed of two pieces, the larger one under the motor and change gear box and the smaller one in front under the starting crank. The material is 20 gauge sheet steel. Together these two shield pieces, reinforced with strap iron, light bars and screws at the edges, wholly protect the moving parts from road drift.

parts are interchangeable. Crank pin ends have babbitted bearings, which can be removed or replaced at any time in a few minutes without disturbing any of the other parts. The piston pin ends are bushed with phosphor bronze and are adjustable for wear; all adjustments made through large hand holes in the case, which can be readily removed without any interference from other parts. Pistons have three eccentric packings, rings cut diagonally and pinned to prevent turning. Intake valves are mechanically operated. All valves are placed vertically in top of cylinder. Exhaust and intake valves are identical and interchangeable. Valves and seats can be taken out by the removal of one nut, and extra valves and seats can be carried and replacement made on the road. Cam rolls and valve adjusting mechanism can be removed without disturbing other parts. Cam shaft, cams and gearing can be removed by simply taking off the small cover at side of case. All parts, including crank shaft and fly wheel, pistons and connecting rods, cam shaft, cams and timing gears, rolls and roll carriers, valve rods and valves, can be taken out readily without removing the motor or disturbing the connections. The water jackets are amply large, entirely surrounding the valves. Circulation is by thermo-syphon system, doing away altogether with circulating pump.

MODEL "D" TRANSMISSION

The change gear of the Model D is of the internal gear planetary type, two speeds and reverse. High speed clutch is the multiple disk type, entirely independent of the gearing. All pinions are steel bronze bushed. Entire transmission is enclosed in oil-tight case, and all adjustments are made from outside of case. All gearing, brake bands and high speed clutch run in oil fed from splash from the engine case. All gears except internal are made from steel carefully cut.

A feature of this transmission is that none of the gears or parts run faster than the motor. This insures a gear which is very smooth and efficient in action, practically noiseless in operation, reducing wear to a minimum, delivering maximum amount of power to the drive wheels. There is no strain on the gearing, when driving at full speed ahead, the clutch carrying the full load and not dividing it between clutch and gearing, as is the case with the usual planetary transmission. The driving gear is a large internal one made from semi-steel, giving more than twice the strength of any of the so-called all spur gear types. Brake bands are made from best phosphor bronze, carefully machined to fit, insuring a very smooth yet positive action, making it possible to manipulate the car without shock, yet giving ample power under all conditions. The top half of transmission case can be taken off and entire transmission removed without disturbing any of the adjustments or controlling mechanism.



New Plant of the Wayne Automobile Co., now in course of erection at Piquette avenue and Brush street, Detroit, Mich. The main building, three stories high, will be 400 feet on Brush street and 300 feet on Piquette avenue. The testing building will be back of the main building, 36x100, and the boiler and engine room, 36x60, with a covered loading platform, 100x16. There will be a private running track, inclosed, to test the machines on the grounds. All the buildings will be mill construction and will be provided with the sprinkler system. The builders are under contract to have part of the main building and testing building and the boiler and engine house finished by January 15 1906. The remainder will be completed in the spring.

It is no credit to any man to say that he is too busy to read his trade papers, but, on the contary, it is a reflection on his business sagacity, and when he has properly systematized his affairs he will realize that it is important to set apart a time for such reading as it is to do the many other things that enter into the routine of his business. If the time cannot be spared during the day, the evening hours may be profitably devoted to it with the added advantage of fewer interruptions.—Trade Press List.

In addition to their 16 H. P. $1200 touring car the Columbia Electric Co., 23 East Ohio street, Indianapolis, Ind., are marketing a 12-14 H. P. centre chain driven runabout, with or without tonneau. The two cylinder, double opposed engine is located under the body and will drive the car at speeds of 3-35 miles per hour. The wheel base is 80 in. and tread 56 in. It has a divided front seat, detachable torpedo deck, is equipped with 28x3 in. tires, horn, rear light, two side lamps and sells for $800.

tion, backward motion the high and direct speed. Interlocking device absolutely prevents gear shifts unless the clutch is disengaged. Left hand foot pedal operates clutch. The right hand pedal operates the internal expanding brakes in rear wheel. The outside clamping or emergency brakes are set with the outside lever at the side of the seat. The application of ratchet brake was previously explained.

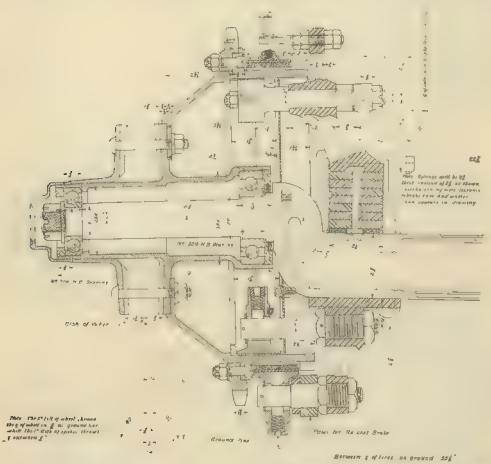
BRAKES.

The Thomas car is equipped with three sets of brakes. It has two internal expanding brakes 11⅝ dia., 1⅞ wide, that are applied with foot pedal. Two outside clamping brakes 12¼ in. diameter x 2 in. wide. These are applied with side lever. In addition to these the cars are equipped with ratchet brake, the ratchet being cast integral with rear wheel brake drum, and is on the outside instead of on the inside as formerly. The steel pawl that when thrown in prevents car from running backward, is applied by small bronze lever, cast with an eye, which is arranged at right of driver on front seat. This is connected to brake pawl by cable, and when lever is thrown straight up pawl is in engagement, and when down, disengaged. This ratchet brake is an exclusive Thomas feature and is protected by patent. It absolutely prevents accident in case motor stops on a steep hill.

The steering gear is of the worm and sector type, worm and sector both being hardened. It is securely fastened to the frame. The steering rods are fitted with Billings & Spencer ball joints. The rod being arranged back of the front axle instead of forward as in former models.

LITTLE THINGS

The Thomas Co. has given small details of construction the utmost consideration, castle nuts split keys being used generously throughout and every precaution is taken to secure against any screw or bolt from working loose. In addition all ignition wires are run through copper tubing to prevent them from becoming soaked with oil. A few other little conveniences were noticed by the writer, one of which was a lug cast on each cylinder directly back of exhaust valve spring which makes a very easy job of removing the valve spring, as the company furnishes a special tool for resting on this lug whereby the spring tension can be easily removed. A leather plunger is also fitted to rear internal brake, which prevents dirt or oil from working in. Driving sprockets can



Cross section drawing, Thomas flyer, rear sub axle, double locking arrangement of hose bright bearings. Note driving sprocket is carried between bearings, the arrangement of brakes and operating levers, the spring seats, the drop in axle arc, the method of which also the securing of the sprocket to the wheel

and the lower half acts only as a dust cover and an oil well. The lower half is also cast with partitions, to assure each individual crank being properly oiled.

The pistons are 7 in. long, and carry four packing rings above the pin and one below. The rings are tongue-lapped. The piston pins are hollow and hardened. The connecting rods are drop forged, and fitted with bronze bushing at piston pin end. The crank pin bearings are adjustable, and are lined with special babbit.

IGNITION.

The ignition is by jump spark, one coil and distributor being used. The commutator and distributor are both arranged on dash and can be easily removed by taking out three screws, without disturbing any of the wiring. The current is supplied by Witherbee storage battery or by Holley magneto. The commutator is driven by shaft and bevel gears from half time shaft. It has four hardened steel joints and contact is made by wipe, and not by roller. It is very substantially made and said to give very little trouble.

LUBRICATION.

The oiling is accomplished with positively driven oiler located on the dash, driven with shaft and bevel gears from the other half time shaft. It feeds oil directly to the engine cylinders and to the engine crank case. The oiler contains no valves and is very efficient and economical in operation.

CARBURETOR.

The carburetor is of the float feed spray type, but has several original features. The gas throttle is linked by peculiar mechanical arrangements to air throttle which varies the position of air throttle in exact proportion to needs of the engine, between carburetor and motor is arranged a butterfly throttle, which is connected to clutch operating lever so that as the clutch is disengaged, the throttle is practically closed, which prevents motor from racing just as effectually as with a governor and with more certainty and much less complication.

COOLING SYSTEM.

The cooling system consists of a Whitlock radiator mounted in front, a positively geared circulating pump, driven from half-time shaft and a belt driven fan. The fan is supported from engine base and front cylinder, and is driven by endless belt. The bearing support is eccentric for tightening the fan belt. The water circulates from radiator through strainer to pump, from pump it enters cylinder water jacket immediately under exhaust chamber and at the hottest part, from top of the cylinders back to the radiator.

TRANSMISSION.

The transmission gives four forward speeds and one reverse, and is of the direct drive on high-gear type. The counter-shaft not running when on high gear. The transmission runs on five Hess-Bright ball bearing

Cross sections of Thomas flyer motor cylinders, showing arrangement of valves, spark plugs, exhaust and inlet passages, water jackets, water inlets and studs for securing valve caps in place.

The 1906 Thomas Flyer

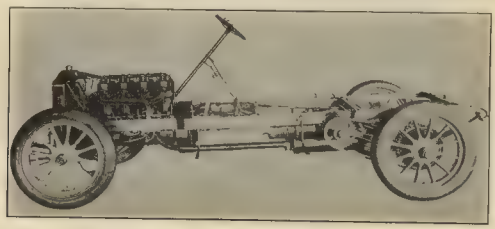
BY W. J. GRUBE

The E. R. Thomas Motor Co., Buffalo, N. Y., will market but one model chassis for 1906. This has a fifty H. P., four-cylinder, vertical motor; a four-speed sliding-gear transmission. Drive is by shaft to transmission, and counter-shaft, through final double chain drive to the rear axle. The car has a wheel base of 118 in.; tread, 56½ in. Wheels are 34 in. diameter, shod with

The 1906 7-passenger, 50 H. P., 4-cylinder Thomas flyer, four speed and reverse sliding gear, wheel base 118 in., 34x4½ in. tires, weight 3200 lbs., price $3000.00.

4½ tires. The general arrangement of mechanism and design follows the lines of the 1905 model, but the car has several important changes, adding to the comfort and to the general efficiency. These changes are herein described for the first time.

tapered at both ends to take the spring hangers, which are drop forged and riveted to the frame. Frame is narrower in front, and is reinforced at the curves by pressed steel section, of same construction and thickness as side members, which strengthens



Side view of chassis 1906 Thomas flyer.

NOTABLE CHANGES.

The most notable changes are that the motor has been increased in size and fitted with mechanical intake valves and mounted on the main frame instead of a sub-frame as heretofore. This arrangement allows the car to be turned in a smaller radius, as the frame being narrower in front allows the steering wheel to be set at a more acute angle. Another important change is the substitution of a metal disc clutch for the cone clutch (this clutch is described in detail later), and that the transmission has four speeds forward instead of three. The wheel base has also been increased, and steering rods are now placed back of the front axle. Magneto-ignition is also supplied, but at an additional cost.

FRAME.

Is of pressed steel construction, .20 to .30 point carbon, 4⅝ in. deep in centre, and

frame materially at these points, which are naturally the weakest. Cross-bars are of the same section as the side members to which they connect, and to which they are riveted and are braced by large angle plates. In addition, the side members are trussed from about eight inches in front of the front spring hangers to the rear spring supports with ⅝-in. round steel rods, connected with right and left turnbuckle.

Semi-elliptic springs of extra length are used, the front springs being 43 in. long, 2¼

in. wide, 7 leaves; the rear springs, 48 in. long, 7 leaves, 2¼ in. wide. The front springs are shackled at rear end; the rear springs shackled both front and rear. The front end being encased in bronze housing, which carries the bearings for jack shaft. This housing is cast with support to which the chain guard and the step to tonneau are fastened.

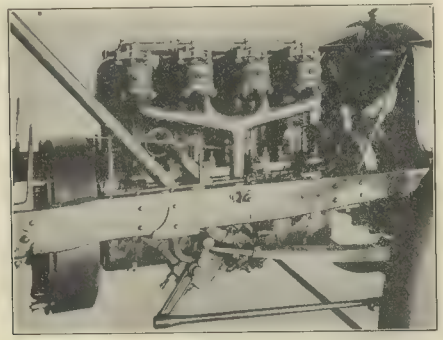
BODY.

The body design is very similar to last year's design, which proved so popular, and the special dust deflecting shape is adhered to, but tonneau backs are not quite as high as formerly and do not obstruct the view in case passengers wish to look backward. The tonneau is especially wide and luxurious and rear seat accommodates three people very comfortably. In addition to the rear seat tonneau is fitted with two revolving seats which will accommodate two more. The occupants of these seats can face forward or sideways or towards the rear, as they see fit. In case the space occupied by the revolving seat is wanted for carrying space, the seats are collapsible and can be easily stored under rear tonneau seat. The car comfortably seats seven people. The cars are finished regularly in three colors, French gray, permanent blue and royal green, striping and trimming being in harmony with the color.

In addition to the large touring box which has always been carried in the rear, the 1906 model is fitted with trunk rack 20x30 in., which, when not in use slides entirely under the body and out of sight. The car weighs completely equipped with two headlights and generator, two side lamps, tail lamp and horn, 3200 lbs. The price is $3500. Top and storm aprons extra, $150. Plate glass front extra, $50. Although the Thomas Co. are making but the one model chassis, they finish this model in four different styles of body—the regular touring car, a limousine, a landaulet and a semi-landaulet. The later models were not sufficiently far advanced to get details, but will be on exhibition at the New York show.

THE MOTOR.

This has four vertical cylinders. Water-cooled cylinders are cast separate, of hard, gray iron, and have a bore of 5½ in. and stroke of 5½ in. The valve chambers, water jacket, and cylinder heads are cast integral with the cylinder. Valves are all mechanically operated, and are 2 in. diameter and are interchangeable. The caps over the valves are easily removed by loosening one set-screw, which allows yoke over cap to be turned around or removed. The valves are operated by two separate cam shafts, driven by combination steel and fibre gears from the engine shaft. These cam shafts are arranged outside of the engine case, but have openings at cams which allow cams, rollers, valve-lifters, and cam-shaft bearings to be oiled from engine splash. The valve stem guides are of bronze, and carry valve-lifters, which in turn carry ⅞ in. diameter, ⅝ in. face, hardened steel rollers. When these valve guides are in place, they effectually close openings in crank case. The cams are of large diameter, and have no straight sides, and valve operation is almost noiseless.



Inlet side of 1906 Thomas flyer engine.

The crank shaft is a solid forging, 1⅞ in. diameter, all bearings being ground accurately to gauge. The crank is carried in five bearings. The outside bearings being 4 in. long and fitted with chain oilers. The inside bearings are 2½ in. long, and cast with oil pocket in caps which fills with oil from the splash. All the crank bearings are secured to the upper half of the crank casing.

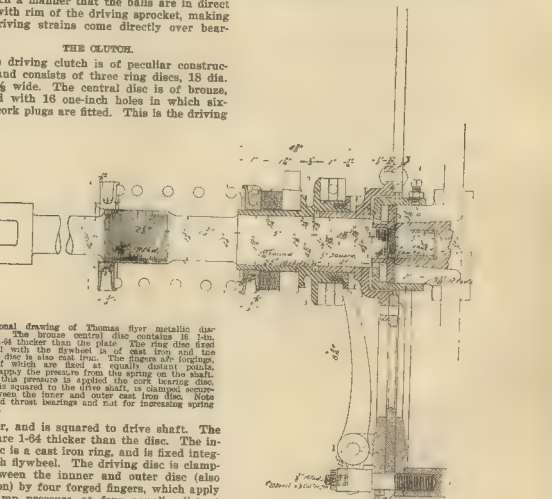
the truth of teeth and wearing surfaces. The transmission also carries two ball-end thrust bearings, carrying 31 ⅝ balls, which takes care of the end thrusts set up by the bevel gears. The shifter arms are drop forged and are clamped and dowelled to rod. The sliding train is mounted on squared and hardened shaft of high carbon steel. The transmission counter shaft is of tool steel. The car drive shaft is of high carbon steel and runs on four Hess-Bright ball bearings, the two already mentioned as being mounted in transmission case. The other two are carried in bronze housings, which are attached to main frame at spring supports. The bearings are arranged in such a manner that the balls are in direct line with rim of the driving sprocket, making all driving strains come directly over bearings.

THE CLUTCH.

The driving clutch is of peculiar construction and consists of three ring discs, 18 dia. by 3½ wide. The central disc is of bronze, drilled with 16 one-inch holes in which sixteen cork plugs are fitted. This is the driving member, and is squared to drive shaft. The corks are 1-64 thicker than the disc. The inner disc is a cast iron ring, and is fixed integral with flywheel. The driving disc is clamped between the inner and outer disc (also cast iron) by four forged fingers, which apply the clamp pressure at four equally distant points on the periphery of ring. The spring on shaft applies a pressure of about 300 lbs. but the leverage is so great, about 11 to 1, that the clutch is very easily engaged and disengaged. The clutch is fitted with ball bearings to take end thrust and so arranged that no end thrust whatever is thrown on motor. The Thomas Company informed the writer that it was the most efficient clutch they had ever used, and in addition to smooth starting, it was absolutely sure to hold when full pressure was applied. In addition to these points the driving disc, being so very light, is sure to prevent shocks to the gears, and the ease with which the corks can be renewed in case they are worn is worth considering, as it would only be necessary to punch the old ones out and to insert new ones. A full universal joint is used between the clutch and transmission, which takes the place of a semi-universal that was used on the 1905 model.

AXLES.

The axles are both drop forged of I-beam section, the front axle having the steering yokes and spring seats forged integral. The rear axle is slightly dropped and has the spring seats forged integral with the bed. Both the front and rear wheels carry a pair of Hess-Bright ball bearings. Bearings in the rear wheel are arranged in such a manner that one set comes exactly under the chain line, allowing the driving strains to come directly over the bearing.



Sectional drawing of Thomas flyer metallic disc clutch. The bronze central disc contains 16 1-in. corks 1-64 thicker than the plate. The ring disc fixed integral with the flywheel is of cast iron and the outside disc is also cast iron. The fingers are forgings, four of which are fixed at equally distant points, which apply the pressure from the spring on the shaft. When this pressure is applied the cork bearing disc, which is squared to the drive shaft, is clamped securely between the inner and outer cast iron disc. Note ball end thrust bearings and nut for increasing spring tension.

CONTROL.

The spark and throttle levers which are arranged on top of steering wheel, are of the button and sector type, fixed independently of the steering wheel. The rods which operate the spark and throttle through bevel gears pass through the steering post. The gear shifts are all on one lever with double path in quadrant. The extreme forward movement of lever in outside path gives the reverse a backward movement in same path it gives the first and second speeds. The inside path gives third speed by forward mo-

Fig. 7. Manufacturers' Foundry Co., a corner of the testing room.

For instance, if some of the high phosphorus castings like those made in Europe are to be produced, it is an easy matter,—pig iron high in phosphorus may be purchased.

If, on the other hand, extremely strong iron is wanted, irons low in total carbon must be selected and properly mixed as far as the other elements are concerned. Such iron will produce castings like the old-fashioned "Gun Iron" famous in war times.

All these points are under control at the Manufacturers Foundry Company. They employ the services of a metallurgical engineer and chemical laboratory for this purpose.

Their pig irons are so blended as to produce a grade of product that has been found by test, experiment and experience to be most suitable for automobile cylinders. It is, at the same time, strong; easy to machine as far as consistent with strong iron; fluid, so as to make good castings, and free from sulphur and other injurious elements, so as to make clean and sound castings. There is no longer any mystery about making perfect castings if sufficient pains are only taken along the lines above described, and the irons are purchased and used on the basis of their real quality and not some imaginary quality conferred on them by a brand name.

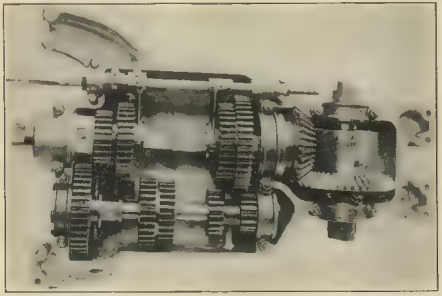
Much stress has been laid upon the behavior of the foreign castings for automobile engine cylinders. The superiority possessed by these engines is the result of the most painstaking machining operations, the accuracy of fit between cylinder and piston rings, and upon the thoroughness of lubrication.

Just as with all other specialists in the world, success must follow the special effort, the special skill acquired in doing one thing over and over again. This specializing and infinite care costs money, however, but it is worth it, and money well spent, because it brings full value in return.

Fig. 8. Manufacturers Foundry Co. offices.

and one Hyatt roller bearing. The roller bearing, which is particularly adapted to withstand hard service, being placed on the drive end. The gears are hardened and

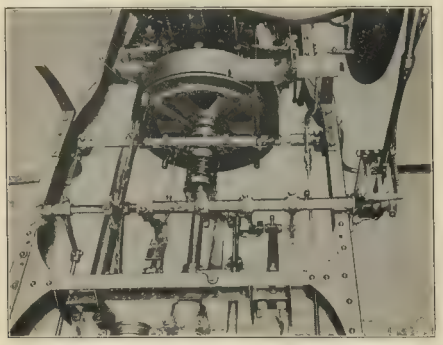
The transmission case is of aluminum of high tensile strength, divided horizontally in the centre. The differential is fully encased in the transmission case, which also carries the



Thomas flyer, 4-speed transmission, containing five Hess-Bright bearings and one roller bearing; the counter shaft is inoperative on the high or direct drive.

ground accurately to size, and are of the ring type, bolted to hub flanges, and are readily removable. The Hess-Bright bearings are held in place by straps cast of Parson-Cramp bronze, and which are secured

two Hess-Bright ball bearings that support the inner ends of the jack shaft. The differential is of the all spur type, the pinions of which can be reversed when worn, allowing as much additional wearing service as when



Section of Thomas frame, showing new metallic disc clutch, the re-enforcing of frame at the curves, the especially long gusset plates, the interlocking device and the bronze hangers that attach the forward end of transmission to the cross frame member, and the quandrant and gear and brake-operating levers.

in place by studs and castle nuts. The bearings are held securely independent of the case, and the car can be run with the top half of the transmission case removed.

new. All the transmission gears are of 6 pitch 1½ face. The bevels are of 5 pitch, accurately planed, in the usual manner, and ground to size after being hardened, assuring

STEEL PLATFORM OR SHOP CAR.

FIG 8574

DESCRIPTION FIG 8574

Gauge of track, 36 inches, capacity 8 tons, wheel base, 60 inches, length, 5 feet, width, 4 feet, height from track to top of platform, 30 inches, wheels, diameter 16 inches, face 3½ inches, weight 1,900 pounds.

PRICE FIG 8574

No. 2 each $45 50

WOOD PLATFORM OR SHOP CAR.

FIG 8575.

DESCRIPTION, FIG 8575

Gauge of track, 36 inches, capacity, 8 tons, wheels, 5 inch x 12 inch, length, 4 feet, width, 3 feet, height from track to top of platform, 20½ inches; sides and end rails, 6 x 3 inches, of oak, platform of 2 inch oak, with three top wearing strips 2 x ½ steel set up 4 rails wheels, 16 inches diameter face 3½ inches weight, 950 pounds.

PRICE FIG 8575

No. 24 each $28 50

YARD PUSH CAR.

FOR YARD TRACKS IN LARGE FACTORIES, LUMBER YARDS, ETC

DESCRIPTION, FIG 8576

For light T track, 30 inch gauge. These cars are well built, light and strong, and will carry a very heavy load. Designed especially for use on yard tracks in large factories, for handling lumber, iron or other material, conveying completed stock from shop to warehouse, etc. Wheels, 12 inches in diameter, 3½ inch tread. Height from track to top of crossboards, 10 inches. Weight 600 pounds. Made with roller bearings when desired.

FIG 8576

PRICE FIG 8576.

No. 2 each $68 50

STEEL YARD PUSH CAR.

FIG 8577

DESCRIPTION, FIG 8577

For light T track 30 inch gauge. Designed for use in reduction works and other metal working plants. Solid steel plate top. No. 8 gauge. Platform. Length 7 feet, width 3½ feet height, 20 inches. Wheels 16 inches diameter, curved spoke, or solid web pattern. Weight 900 pounds.

PRICE, FIG. 8577

No. 30 each $88 00

PIPE CAR.

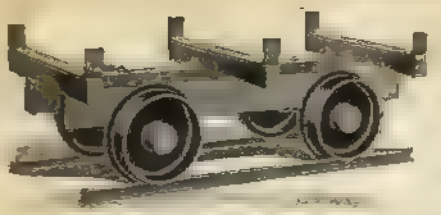


FIG. 8578.

DESCRIPTION, FIG. 8578.

Gauge of track 2 feet. Capacity [illegible] pounds.

Platform, 5 feet long by 3 feet wide; side rails 2½ x 5 inches, cross rails 2½ x 4 inches.

Wheels diameter 16 inches; tread 3½ inches.

Weight, 540 pounds.

PRICE, FIG. 8578.

No. 4A, each . . . . . $[illegible] 00

CLAY CAR.

DESCRIPTION, FIG. 8579.

Gauge of track, 42 inches. Capacity 30 cubic feet.

Box length, 75 inches; width 38 inches; depth, 18 inches of 1¼ inch oak. End drop gate, with side wings of No. 12 galvanized steel and adjustable chains. Top straps, 1½ x ¼ inches. One inch pipe handle on end.

Weight, 780 pounds.

PRICE, FIG. 8579.

No. 7B, each . . . . . $[illegible] 00

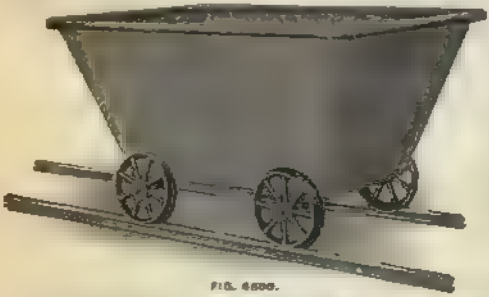


FIG. 8580.

FIG. 8579

STANDARD STEEL SUGAR CAR.

FOR HANDLING RAW SUGAR

DESCRIPTION, FIG. 8580.

Gauge of track, 2 [illegible] Capacity [illegible] feet. The box of the Sugar Car is made of No. 12 gauge selected steel. The bottom of the Car is [illegible] from a single sheet [illegible] to receive [illegible] pass through and are secured [illegible] on the under side. The ends are attached to the sides in the same manner and the top is finished with a rolled rim, giving the much desired [illegible] finish. The method of construction does away with angle bars and rivets, and leaves the entire box perfectly smooth and free from rivets on the inside. The box is 60 x 40 inches inside at top, 60 x 20 inches inside at bottom, 20 inches deep inside. Flanged wheels 12 inches in diameter, [illegible] inch square. The cars are supplied, when so ordered, with the most improved valves. The hole for valve in middle of bottom at end is 1 7/8 inches in diameter. Valves are charged extra. If we make no extra charge for punching holes for [illegible] This can be altered if desired to meet requirements of purchasers. Estimates made upon special designs.

SHOVEL NOSE SUGAR CAR.

DESCRIPTION, FIG. 8581

Box 56 inches long on top, 36 inches long on bottom, 32 inches wide on top, 28 inches wide on bottom.

Made of No. 12 plate, flanged on ends and bottom.

Top band, 1½ x ¾ inches.

Handle, ⅝ inch round.

All ⅞ inch rivets, countersunk on inside.

Steel axle, 1⅞ inches round, with flat face wheels and casters.

Weight, 825 pounds.

No. 18A, each . . . . . [illegible]

FIG. 8581.

THE FAIRBANKS COMPANY

TRIPLE DECK CAR.

THREE STEEL DECKS, ANGLE FRAME

FIG 8583.

DESCRIPTION, FIG 8582

The above illustration shows standard No. 23 Triple Deck Car with three steel decks. This Car is designed to be used where a quantity of material is desired to be handled at once, such as pipe, brick, tile and hollow ware. The uprights are trussed and supported by the steel plate gusset. The middle and upper decks are hinged on one side, allowing them to be raised to facilitate loading, also adjustable for different heights. Equipped with improved roller bearings. Solid web wheels with extra wide faces or spoke wheels when so ordered. Flat steel spring bumper as shown in the cut.

Length over all, 6 feet 11 inches, width over all, 35 inches, track gauge, 24 inches, capacity, 4,000 pounds, weight, 600 pounds. Prices on application.

STEEL DRYER CAR.

DOUBLE DECK, TWO STEEL DECKS, ANGLE FRAME

FIG. 8584.

DESCRIPTION FIG. 8584.

The Illustration shows a standard Double Deck Car. Lower deck securely riveted to the frame of Car. Upper deck to be portable steel. Uprights trussed and supported by the steel plate gusset. Equipped with improved roller bearings. Solid web wheels with extra wide faces or spoke wheels when so ordered.

Length over all, 6 feet 11 inches, width over all 35 inches, track gauge, 24 inches, capacity, 500 to 600 brick, weight, 550 pounds. Prices on application.

STEEL DRYER CAR.

ANGLE FRAME, CHANNEL CENTER UPRIGHTS.

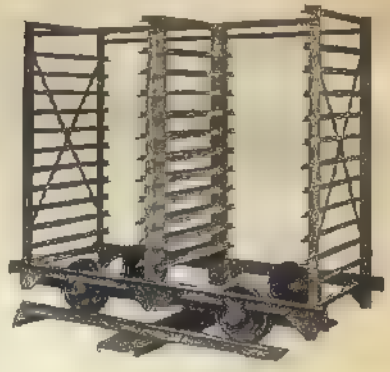


FIG 8585.

DESCRIPTION FIG 8585

The above Illustration shows standard rack Car using 4 inch channel for the center uprights. The uprights extend below the side bars and are equipped with the steel plate gusset. The Car is 12 pallets high and the distance between pallet sides is 4¾ inches top to top. Equipped with improved roller bearings. Solid web wheels with extra wide faces or spoke wheels when so ordered. Length over all 6 feet 9 inches width over all, 34 inches, track gauge, 24 inches capacity, 600 brick, weight, 800 pounds. Prices on application.

SPECIAL TILE AND HOLLOW BLOCK CAR.

ANGLE FRAME, FOR PORTABLE WOODEN DECKS.

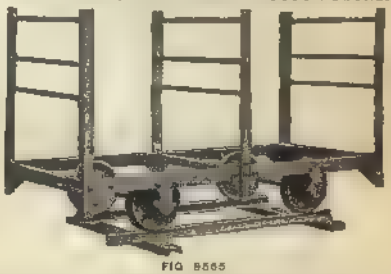


FIG 8565

DESCRIPTION, FIG 8565

A special Car for tile, hollow block etc. for four easily constructed wooden decks, adjustable to heights. The uprights are trussed and supported by the steel plate gusset. Equipped with improved roller bearings. Solid web wheels with extra wide faces or spoke wheels when so ordered. Length over all 6 feet 8 inches width over all 36 inches, track gauge, 24 inches, capacity, 2,500 pounds weight, 3-0 pounds. Prices on application.

AUTOMATIC MINE CARS.

WITH AUTOMATIC LOCKING DEVICE

FOR ALL GENERAL MINE PURPOSES

DUMPING POSITION.

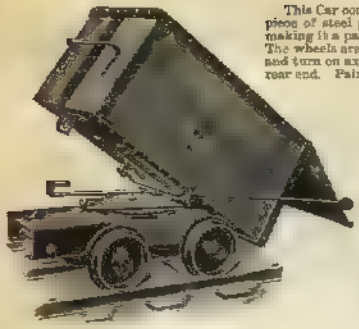


FIG. 8588

DESCRIPTION, FIG. 8588

This Car combines simplicity with accuracy. The platform is stamped from one piece of steel plate, the fifth wheel or turntable being stamped in the same plate, making it a part of the platform. The beds are made of the best quality of steel plate. The wheels are of cast iron, chilled on face supplied with self oiling dust proof caps, and turn on axles. All other parts are of forged steel and iron. Dumps on sides and rear end. Painted black, brown, steel blue, or red. The following are standard sizes.

PRICES FIG. 8588.

No. 1 bed 44 inches long 24 inches wide, 21 inches deep, sides of box made of No. 14 steel, bottom and door No. 12 steel wheels, 10 inches diameter, axles, 1½ inch square, capacity 9 cubic feet, extreme outside dimensions, 58 inches long by 30 inches wide by 36 inches high, weight, 380 pounds, each . . . $58 50

No. 2 bed 44 inches long, 24 inches wide, 24 inches deep, sides and bottom of bed are made of No. 12 steel, bottom No. 10 steel, door No. 12 steel, wheels 10 inches diameter, axles 1½ inch square, capacity 12 cubic feet, extreme outside dimensions, 58 inches long by 28 inches wide by 38 inches high, weight, 420 pounds, each . . . 60 00

No. 3 bed 44 inches long, 24 inches wide, 24 inches deep, sides of bed are made of No. 12 steel, bottom No. 10 steel, door No. 12 steel, wheels 10 inches diameter, axles, 1½ inch square, capacity 12 cubic feet, extreme outside dimensions, 58 inches long by 28 inches wide by 38 inches high, weight, 420 pounds, each . . . 60 00

No. 4 bed, 48 inches long, 24 inches wide, 25 inches deep, bottom, door and sides are made of No. 8 steel, wheels, 12 inches diameter, axles, 1½ inch square, capacity 16 cubic feet, extreme outside dimensions, 57 inches long by 28 inches wide by 48 inches high, weight, 700 pounds, each . . . 68 50

No. 5 bed 48 inches long 30 inches wide 25 inches deep, sides and bottom bed is made of No. 8 steel; wheels 12 inches diameter, axles, 1½ inch square, capacity 20 cubic feet, extreme outside dimensions, 57 inches long by 34 inches wide by 45 inches high, weight, 780 pounds, each . . . $70 00

CONTRACTORS' TIP CAR.

DESCRIPTION FIG. 8587

It is entirely of iron and steel. Bumpers and link couplings enable them to be coupled and propelled either by hand, horse or steam power.

PRICES FIG. 8587.

No.	235	236	237	238
Capacity, cubic feet	30	37	36	45
Width, inches	42	52	54	58
Length, inches	60	66	66	74
Height of car, inches	54	56	64	64
Gauge of track, inches	24	24	30	36
Each	$85 00	$95 00	$115 00	$140 00

FIG. 8587

FIG. 8588.

TIP CARS.

DESCRIPTION, FIG. 8588.

The Tip Car takes the front rank for many industrial uses. Its adaptability for conveying materials, whether solid or in pasty or liquid form renders it highly efficient for many special uses. The sides of the car body are inclined, making it top heavy and securing rapid dumping of the contents when tipped.

PRICES. FIG. 8588.

No.	230	231	232	233	234
Capacity, cubic feet	12	20	25	30	45
Capacity, Lbs.	600	1,000	1 250	1 500	2 250
Width over all, inches	37	47	45	5	53
Length over all, inches	59	60	63	65	79
Height of car, inches	36	48	55	58	61
Diameter of wheels, inches	10	12	14	6	8
Gauge of track, inches	24	24	24	28	30
Wheel base, inches	24	28	28	28	30
Weight of car, lbs.	[illegible]	530	800	950	1 050
Each	$60 00	$75 00	$85 00	$100 00	$125 00

THE FAIRBANKS COMPANY

OVAL HOPPER SIDE DUMPING TIP CARS.

DESCRIPTION FIG. 8589

This Car is designed for conveying coal and other bulky material on wharf [illegible]. The hopper is made of steel [illegible] with a heavy wrought iron band [illegible] and rests upon [illegible] and bolted to the [illegible] and bottom [illegible]. When the catch is released [illegible] either end [illegible] at the will of the operator [illegible] the other end [illegible] position [illegible] automatically. The [illegible] is made of oak wood or iron as desired. [illegible] are [illegible] above. For Cars of large [illegible] and of varying dimensions [illegible] for Cars fitted with anti-friction roller bearings [illegible] above.

FIG. 8589

PRICES, FIG. 8589.

No.	340	341	343	344	344
Capacity, cubic feet	33	38	43	57	80
Coal capacity, lbs.	1,190	1,650	2,240	2,960	4,480
Height of car, inches	30	30	33	34	38
Height of car when dumping, inches	63	74	78	84	95
Extreme length, inches	80	86	90	94	112
Width of car, inches	30	30	31	33	33
Diameter of wheels, inches	14	14	16	20	26
Wheel base, inches	32	32	36	48	46
Each	$130.00	$140.00	$150.00	$175.00	$235.00

RECTANGULAR BODY TIP CARS.

DESCRIPTION, FIG. 8590.

This Car is intended for the same purpose, and is built similar to the Car shown in Fig. 8589. The hopper is made rectangular on the top instead of oval, the object being to give a greater capacity with the same outside dimensions, and also to fit the car to handle [illegible] as coal, log wood etc.

PRICES, FIG. 8590.

No.	345	346	347	348	349
Coal capacity, lbs.	1,190	1,650	2,240	2,960	4,480
Capacity, cubic feet	33	38	43	57	80
Each	$130.00	$140.00	$150.00	$175.00	$235.00

[illegible]ed.

SIDE DUMPING CARS.

WITH SLIDING DOOR.

FIG. 8592.

DESCRIPTION FIG. 8592.

The bot[illegible]om of [illegible] hopper may [illegible] by [illegible] operated by a lever as shown, is attached.

PRICES FIG. 8592.

No.	338	339	340	341	342
Coal capacity, lbs.	[illegible]20	1,[illegible]40	2,[illegible]40	2,960	4,480
Capacity, cubic feet	[illegible]	[illegible]	[illegible]	57	80
Each	$[illegible]	$[illegible]	$[illegible]	$175.00	$235.00

END DUMPING CARS.

WITH SLIDING DOOR.

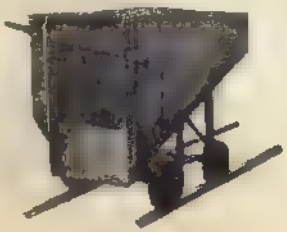


FIG. 8591.

PRICES FIG. 8591.

No.	370	371	372	373	374
Coal capacity, lbs.	1,120	1,650	2,240	2,960	4,480
Capacity, cubic feet	[illegible]	[illegible]	43	57	80
Each	$[illegible]	$[illegible]	$[illegible]	$175.00	$200.00

ROTARY DUMPING MINING CARS.

DESCRIPTION FIG. 8593.

These Cars are made of best wrought iron and steel throughout, they are very strong and durable, properly balanced, easily managed and dumped. The door does not require to be opened until the bed of the car is at [illegible] angle of dump. The door is held in place by connecting rods placed on both sides, and operated by a hand lever as shown.

FIG. 8593 SHOWING END DUMP

FIG. 8593. SHOWING SIDE DUMP

PRICES FIG. 8593

No.	310	311	312	313
Capacity, cubic feet, [illegible]	10	28	32	45
Length over all, inches.	44	45	58	58
Width over all, inches.	28	30	36	40
Height of car, inches.	41	40	48	36

No.	310	311	312	313
Diam. of wheels, inches.	18	18	14	18
Gauge of track, inches.	19	28	24	30
Weight of car, lbs.	700	800	1 50	1 650
Each	$100 00	$120 00	$ 00	$225.00

ROTARY DUMPING MINING CARS.

DESCRIPTION FIG. 8594

These Cars are thoroughly well made. The sides and end of car body are made of heavy steel plates and the bottom of still heavier stock, all securely riveted. The top is reinforced with a strong wrought iron band. The body is supported on a cast iron turn table, which permits the load to be dumped at one end or on either side. One lever serves to operate hinged door and axle to lock the car box to its truck frame. The frame is made of hardwood, the axles of square steel. Wheels of cast iron with chilled face.

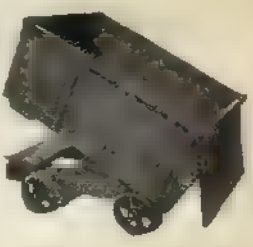


FIG. 8594.

SHOWING FIG. 8594 TIPPED.

PRICES, FIG. 8594

No.	314	315	316	317	318
Capacity, cubic feet.	10	2	22	27	45
Length, inches.	44	46	58	58	72
Width over all, inches.	28	30	36	40	44

No.	314	315	316	317	318
Diam. of wheels, inches	12	12	12	16	16
Gauge of track, inches	24	24	24	30	36
Each	$1 00	$1 [illegible] 00	$1.[illegible] 00	$1[illegible] 00	$2[illegible] 00

END DUMP TIP CARS.

DESCRIPTION, FIG. 8595

This Tip Car is used for coal, ore, clay, sand, etc. The side of Car is made of iron, and the truck frame is wood. A hand lever catch connects the body and truck, as shown.

FIG. 8595.

SHOWING FIG. 8595 TIPPED.

PRICES FIG. 8595

No.	295	296	297	298
Coal capacity lbs.	500	750	1,120	1,800
Capacity, cubic feet.	10	15	22	36[illegible]
Gauge of track, inches	18	20	24	[illegible]
Width, [illegible]	34	37	39	[illegible]

No.	295	296	297	298
Length, inches.	50	53	56	60
Depth, inches	19	28	24	38
Each	$6[illegible] 00	$[illegible] 0	$50 00	$105 00

THE FAIRBANKS COMPANY

BOTTOM DUMPING CARS FOR OVERHEAD TRAMWAYS.

FIG 8598

DESCRIPTION FIG 8598

Where coal or other material is conveyed by overhead tramways on wharves to storage sheds, these bottom dumping cars (as shown in the accompanying cuts) are particularly adapted. They are strong, simple, durable, and can be easily handled by one man

PRICES FIG 8598

No.	819	820	821	822
Coal capa. ty, lbs.	1,120	2,240	3,360	4,480
Capacity, cubic feet	25	46	67	90
Height inches	43	43	51	54
Length over all, inches	48	68	78	88
Width over all, inches	40	48	54	58
Wheel base, inches	24	30	30	32
Gauge of track, inches	36	40	40	40
Diam. of wheels, inches	20	26	28	32
Ea.	$120 00	$145 00	$175 00	$225 00

BOTTOM DUMP CAR.

DESCRIPTION, FIG 8597

This Car was specially designed to carry sand and gravel from bank to and upon elevated tramways, from which the load is dropped and run through chutes to the decks of scows. The sides of the car form doors of the hopper, being hinged to the sides, and are arranged to act as fenders when dropped, preventing the contents from running over the track

A rock shaft with lever, crank and hoisting chain are provided. The chain is carried over two sheave wheels placed on the end and center of a covered housing, running from side to side of Car. The housing serves to [illegible] and protects the wheels from wear. The load can be [illegible] dumped by hand [illegible] and [illegible] on the track. The [illegible] of the [illegible] plate [illegible] [illegible] [illegible]

STEEL MINE SKIP.

DESCRIPTION, FIG. 8599

Capacity 18 cubic feet, or 1,800 pounds of ore. Steel box. Length on top, 38⅝ inches; on bottom, 48 inches; width, 34 inches; depth [illegible] inches. ⅛ steel. Center [illegible] corners, 2 x 2 x ¼ [illegible]. Reinforced [illegible] ends and open end under bottom and [illegible] cast. Rail, 2¼ x ½ inches, with [illegible] flanged face wheels, 13 [illegible]. Gauge of track, 24 inches. Distance [illegible] outside of flanges of outer rear [illegible].

Special [illegible]

PRICE, FIG. 8599

No. 8, weight 720 lbs. each [illegible] $50 00

FIG. 8599

CUPOLA CAR.

DESCRIPTION, FIG. 8600.

Top [illegible] inches wide, [illegible] inches high. Body [illegible] inches wide, 18 inches deep. Bottom, ⅜ [illegible] plate. Ends, ⅜ [illegible] corner angles, 3 x 2½ x ¼ inches. Top band, 2 x ½ inches. Stamped steel truck frame. 56 inches long. Chilled face wheels, 14 inches diameter, on 1½ inches square axles. Wheel base, 30 inches. Gauge of track [illegible].

PRICE, FIG. 8600.

No. 14B, weight 750 lbs. each [illegible] $100 00

FIG. 8600.

FUNNEL SHAPED CHARGING CAR FOR GAS WORKS.

MADE ENTIRELY OF STEEL.

FIG. 8601

CHARGING WAGONS FOR GAS WORKS.

FIG. 8602

CHARGING CARS.

COMPARTMENT

FIG. 8603

DOUBLE END

FIG. 8604

Figs. 8601 to 8604 show different styles of Charging Cars we can furnish. Prices on application.

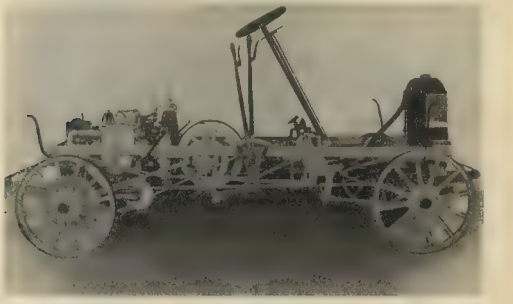
friction drive was not a good thing because it was not mechanically correct, for the reason that the friction disk traversed by a friction wheel on an axis at right angles to that of the disk, must be true to its name, and cannot be a "rolling" drive, because the driven wheel must have some width of face and so must slip instead of rolling as it turns.

Knowing this slipping to be wholly unavoidable, and being aware of many costly failures in attempting to apply the friction-disk and traversing-wheel to car-driving, it seemed to the writer that whatever he saw at the Lambert shops, or of the work of the "Lambert" friction-driven cars on the road, would leave him sure in his own mind that the friction-and so could never have a permanent place in motor car construction.

frictional engagement, too, or they could not drive the car, and they do drive the car, strongly.

With the inside wheel edge at the disk center, the ratio of velocity variation is infinite, no matter what the wheel face is. With 1¾ ins. wheel face, and the inner edge of the wheel 10 ins. from the disk center, the disk would move about 63 inches past the inner disk-edge and about 74 inches past the outer disk-edge, making the slip per disk turn, about 11 inches; whether either edge of the disk or the middle of the disk does the driving, the 11 inches slip must be constant, but the slip ratio at 10 inches radius is not very great.

No one can tell just where the drive is from the disk to the wheel, and there must be a



Lambert Model A runabout chassis side, motor placed in rear This is the lowest cost placing of a pair of opposed cylinder motor, is also the most accessible motor location and also places the most weight on the drivers, and is therefore an extremely suitable design for a light low-priced car, and these weighty considerations lead to the retention of this form for the smallest, lightest and lowest priced Lambert car, although it is a marked variation from their other 2-cylinder driven car designs.

drive in the variable-speed form was bad, generally, and could never be made good.

The disk and traversing wheel or pinion do have wasteful friction. The driven member has a wide face in the "Lambert" construction, 1¾ ins. wide the wheel face is, consequently the disk travels about 11 inches more past the outer edge of the wheel in every disk revolution than it travels past the inner edge of the wheel. If the wheel is set with its inner edge at the disk center there is no disk travel past his inner wheel-edge, and in each revolution of the disk nearly 11 inches of disk surface must pass the outer edge of the 1¾ in. wide wheel face. This 11 inches of travel difference is constant, because $1\frac{3}{4} \times 2 \times 3.1416 = 11$ nearly, but as the wheel is moved outward from the center of the disk the ratio of the disk velocities past the inner and outer wheel-edges is reduced, so that the farther out the wheel stands the better, or the less bad, the drive becomes.

But here is 11 inches of slip to every disk turn, sure, and slip of surfaces in good strong lot of friction which wastes power, same as there is with the best forms of hardened steel gear teeth. There is a great lot of wasteful friction in the paper and aluminum "Lambert" disk-drive, as shown by the regular and constant diameter reduction of the wheel by wear, which calls for a new paper wheel occasionally, but the wheels do not cost much, the part of them that wears out, and the replacement is easy.

Practically, then, the question is not one of waste by friction, but of how much this waste reduces the speed of the car, increases the driver's labor, and adds to the up-keep charges per mile of car travel.

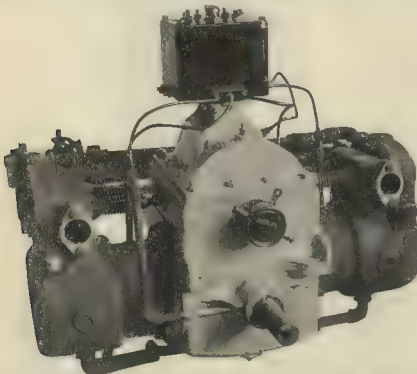
The practical answer, as given by the "Lambert" car performance on the road, is that the friction-disk drive does not reduce the car speed at all, that it is by far the easiest on the driver of any ever fitted to a car, and that the up-keep charges are so small as to demand no consideration whatever.

This seems mechanically impossible, but on

steel bell clank, forked and carrying a U-shaped shoe to engage the grooved hub on the driving wheel at one end, and having the other end linked to the speed change and reversing lever. The wheel slides freely on the sleeve, when moved away from the disk, and all speeds can be had in either direction, highest to lowest both ways.

The Lambert drive is always side chains to rear wheels, a balance gear being, of course, used to connect the splined sleeve on which the wheel slides and the steel shaft, which supports the sleeve. The whole Lambert drive is too simple and obvious to require detailed description, the full illustrations telling the whole story, except that of cams. The cam faces are slightly convex, and work on hardened rollers, carried in swinging forks, which bear against square ended sliders. The valves have gray iron heads driven to shoulder on rivetted steel stems, ends hardened. The valve action is direct, no side action on the sliders, and all parts of the Lambert opposed motors are of ample strength. The compression is 50 to 55 lbs. Lambert's experiments are against high compression and air cooling and two cycle motors. The workmanship of these motors is good, of course.

The Lambert cars are a good, strong, well built job throughout, marked by strong individuality of design, with a marked inclination



Lambert opposed cylinder motor. This motor has a number of features not usual in this form of gas engine, some of which are specified in the text. The oiler is of the precision variety, in which a reticet actuated worm drives a worm gear carrying spring actuated oil forces pump successively over the oil lobes to be supplied, the plunge spring being compressed by a circle of wedges, and the rise from each compression being regulated by an individual temper screw. Oil feeds drop oil on the crank wrist rod ends. The cranks have full disk arms, and the crank shaft journals run in bronze bearings. The rods have hinged caps on the wristends, and are babbitted with picked babbitt. The piston ends of the steel drop forged rods have bronze bushes forced in place and pinned against rotation. The piston pins are of large diameter for the cylinder bore, are steel, hardened and ground. The pistons are cylindrical, free fit in the cylinders, and have three rings at the head end, 45 deg. lap, pinned to pistons. The cylinders are chucked in the five plate bored with single point tools, and are then ground with an overhung emery wheel, cooled with a large stream of water. The rod caps are held open by strong coiled springs, which shut entirely into the chambered caps, into which the split pin, the spring taking the place of bucket

car performance, which is given in the final "On the Road" section of this article.

Three point suspension saves driving power by decreasing the mass lift in passing road surface variations, and also saves wear and tear of running parts and of car bodies.

The Lambert 2-cliuder motor chassis, as shown, is used in models 4, 5 and 6, the last having a smaller engine, but precisely the same otherwise.

A different design from that of any other Lambert cars is shown in the side view of Lambert 1906 Runabout Chassis.

THE LAMBERT VALVE ACTION.

The hardened steel cams are applied to the cam shaft, retained with long driven keys

towards simplicity, and what may be termed common sense engineering everywhere in evidence. While the Lambert cars are well finished and of fine appearance, they show a conspicuous avoidance of needless parts and purely academic refinements of design. They are made to give a large capacity for useful effort for the price fixed and to run fast and far and all the time. That they can do what they are built to do, friction drive and all is fully proved by the following story of actual work.

ON THE ROAD.

If there was one single thing that Hugh Dolnar was sure of when he first took his seat in a "Lambert" car, it was that the

the road it was all true, vastly to the astonishment of the writer, who thought he knew, but did not know.

Here is what a "Lambert" car did, Dec. 8, 1905, with Mr. S. W. Lambert driving and the writer as passenger. The car was a 2200 lb. "Lambert" Model 7, with a cape-top, driven by four 4½x5 in. vertical, 4-cycle, water-cooled cylinders. The day was fine. The roads were almost level, very good surface, loamy clay, where dry, but very slippery where wet, as they were for perhaps 25 per cent. of the total distance covered, and was stopped because of horses, and had to be started again, and for miles together the rear end of the car seemed to be on parlor skates, and once went much too far into the ditch on the driver's side.

All this does not show much power loss by friction driving. Mr. Lambert handled the speed change often in silence and at pleasure, and very sharply at times, and the behavior of the car was perfect in every particular; nothing could have been better.

Before making this run the writer was passenger in another "Lambert" car in a slow

Lambert 1906 Model A, rear of car, engine cover raised, showing complete motor accessibility.

the road was also very crooked, and there was a good deal of town travel in the route, at slow rate, and there were many full stops because of frightened horses, and delays because horse drivers would not let the car pass. The car started at 9.10 A. M., ran from Anderson to Noblesville, from Noblesville to Pendleton and from Pendleton back to the Lambert shops in Anderson in 85 minutes. Distance covered, 48½ miles; high speed, as shown by recorder on the car, about 38 miles.

The morning was warm and beautiful, and the bare, frozen road-surface was thawing rapidly, and the 5-passenger car was light behind with only two passengers up, and Mr. S. W. Lambert, who is an extremely good and careful driver, was very reluctant in the matter of fast running, was constantly urged to pace by the writer, and drove the skidding car faster than he thought safe, and was glad to come to the journey's end.

The average speed was much better than 2 minutes to the mile, and twice the engine speed very steep hill-climb, in which the performance was faultless, the friction drive working more smoothly than any toothed-gear-driven car the writer has ever ridden in, on low gear.

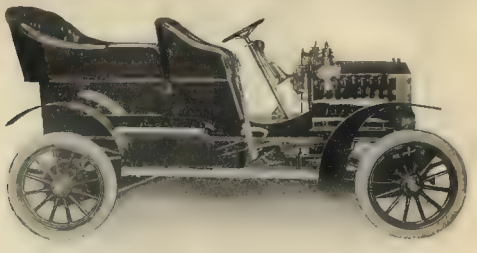
Looking back, it does not seem to the writer that this 48½ mile drive could have been made at better than 30 miles per hour, but the timing was by both driver and passenger, and the mileage was by recorder, and the distance has since been otherwise verified.

The start was at 9.10 A. M. and the writer walked into the Lambert shops at 10.35 A. M., making the total elapsed time 85 minutes for 48½ miles run.

This is a road record to be proud of, under the conditions, and makes it easy for the writer to believe the assertion of Mr. Sam Lambert that he drove the same car, 4 passengers up, 179 miles, Anderson, Indiana, to Delaware, Ohio, in 6 hours of total elapsed time, on the 20th day of September, 1905.

lbs.; price $1200, including mats, horn, oil, side lamps and tools.

Lambert 1906 Model 4. Detachable tonneau, 5 passengers; same chassis as Model 5; weight 1800 pounds; price $1050, including



Lambert 1906 Model 4. Detachable tonneau, 5 passengers same chassis as Model 5, weight 1800 pounds, price $1350, including mats, horn, two oil lamps and tools.

mats, horn, two oil lamps and tools.

Lambert 1906 Model A Runabout; wheel base 78 in.; gauge 56 in.; wheels 30x3½; motor, a pair of 6x4 cylinders opposed, set over the rear axle; friction disk drive, side chains to rear wheeds; weight 1600 pounds; price $900, including mats, horn, two oil lamps and tools. The driver's hood and truck platform to suit business are extra.

Model B Truck, Lambert 1906, carries a paying load of 1500 pounds, and has cylinders 6x4½ ins., otherwise same construction as Model A truck, weight of Model B Lambert Truck 2400 pounds, price $1500.00, same equipment as Model A Truck.

Lambert 1906 Model A runabout. Wheel base 78 in., gauge 56 in., wheels 30x3½ in. Motor a pair of 6x4 cylinders opposed, set over the rear axle, friction disk drive, side chains to rear wheels; weight 1600 pounds; price $900, including mats, horn, two oil lamps and tools.

LAMBERT FRICTION SPEED CHANGE AND DRIVE.

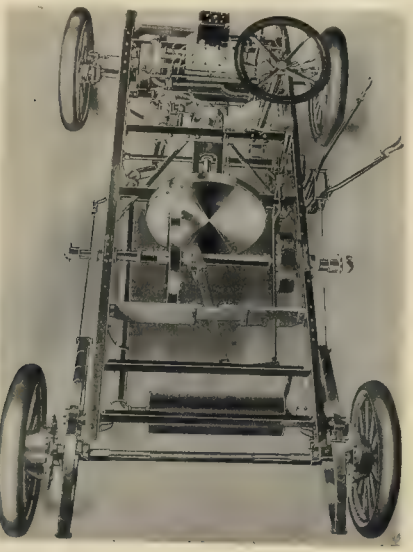
The distinctive feature of the Lambert cars is, of course, the friction disk drive. John W. Lambert took up the friction disk and traversing pinion drive in 1900. The first attempt with a leather faced disk and gray iron friction wheel, 18 in. diameter x 1½ ins. face. The leather was charred in the first three miles run. The disk was then faced with wood fiber, ½ in. thick. This material has a glossy surface, and drove well until the

lamps and tools.

Lambert 1906 Model A Truck; paying load 3000 lbs.; wheel base 96 in.; gauge 56 in.; wheels 32x4 rear, and 32x3½ in. front; solid "Firestone" tires; motor underneath, in rear of driver's seat, a pair of horizontal opposed cylinders, 5½x6 in., friction drive, side chains to rear wheels; weight 3000 pounds; price $2000, with driver's seat and cushion, two oil

that Lambert cars have been more successful than other cars which have failed in attempts at friction driving, and its is safe to say that but for the accidental discovery of this combination, the Lambert cars would not now be friction disk and traversing wheel driven.

The Lambert cars are of various models,



Lambert 2-cylinder chassis, Models 4, 5 and 6, Model 6 having a larger motor but otherwise the same. This illustration shows admirable the Lambert Friction Disk speed change. The grey iron disk, 22 in. dia., is faced with an aluminum disk of equal size, 5-16 of an inch or so in thickness. The traversing wheel is 18 in. dia. by 1½ in. working face, straw-board rings 18 in. out dia. by 3 in. radial dimension, being clamped between cast iron members supporting the straw board rings inside and clamping them sidewise. This fibrous friction wheel is splined to slide on a sleeve 17⅝ in. dia. revolubly carried on a steel shaft 13 in. dia., journaled in swinging boxes so that the wheel can be pressed against or separated from the grey iron, aluminum-faced driving disk, which is motor driven.

the disk center. A great many motor wagon constructors have endeavored to apply this mechanical movement to motor car driving, few of whom have reached a recognized success. It is not impossible in view of the satisfactory results shown in these cars, that other materials than those patented to Lambert may make a good friction drive for cars,

motors and prices, the two cylinder opposed motor being set crosswise, both in front and rear, and the 4 cylinder tandem motor being placed in the most costly Lambert car, but in all the drive is friction disk speed change and side chains to rear driving wheels. Models 7 and 8 use three point suspension. The other models are of ordinary form.

This drive is, as is well known, of the utmost simplicity, the wheel being driven faster as it is moved outward across the disk, and changing direction of rotation when it crosses

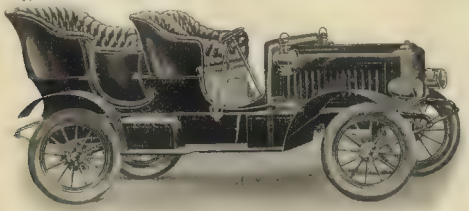
but so far this possibility remains to be demonstrated.

The friction wheel has about ⅝ of an inch of strawboard projecting beyond the metal sides, and the paper faced wheels are expected to drive a car about 2000 miles before wearing the paper down to the metal, then, at a cost to the user of $2.50, a new paper friction part is furnished by the Lambert Company, renewal being applied by an unskilled person quickly, easily and well.

The speed change action is simply a large

fast as the valve actions of those days would run, compression about 45 pounds.

The first friction driven car, as designed by John Lambert, was on the road in 1900; this car was produced by a third corporation, known as the Union Automobile Company of Union City, Indiana. The motor was a pair of opposed 6x4 ins. cylinders, far in front, crosswise, side chains to rear drivers. This was quickly followed by a second friction driven model, same motor placed crosswise in extreme rear of car. Over three hundred of the "Union" cars have been made and sold, giving good satisfaction.



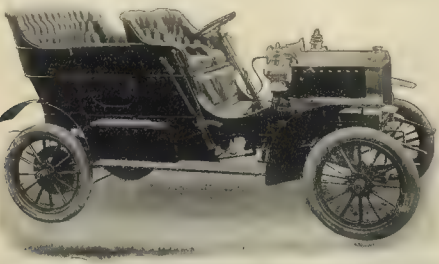
Lambert 1906 Model 7. Wheels 32x4, otherwise same chassis as Model 8; 5 passengers, detachable tonneau, no doors to driver's seat; weight 2000 poundis; price $2000, including mats, horn, five lamps and full tool equipment, all ready for extended touring.

The first Lambert Automobile was sold June 1st, 1905, a design by John Lambert, and the 1906 line of "Lambert" 1906 cars is here illustrated and described for the first time: it consists of 8 models, the specifications of which are as follows:—

Lambert 1906 Model 8, 5 passengers touring car. Wheel base 98 inches, gauge 56 in. Wheels 34x4½ in. Motor four 4-cycle water-cooled vertical cylinders, tandem, 4 ½x5 ins., friction disk drive, side chains to rear wheels. Weight 2200 lbs. Price $3000, including mats, horn, 5 lamps and generator, a Jones Speedometer, and a full tool equipment ready for extended touring. Side doors to tonneau, and also side doors to driver's seat.

Lambert 1906 Model 7. Wheels 32x4, otherwise same chassis as Model 8, 5 passengers, detachable tonneau, no doors to driver's seat. Weight, 2000 lbs. Price, $2000, including mats, horn, 5 lamps, and full tool equipment, all ready for extended touring.

Lambert 1906 Model 6 is a side entrance touring car, same body as Model 7; wheel



Lambert 1906 Model 5, 5 passenger detachable tonneau, wheel base 94 in., gauge 56 in., wheels 30x 3½ in.; motor a pair of opposed cylinders 6x4, set far in front, friction drive, side chains to rear wheels. weight 1800 lbs.; price $1500, including mats, horn, oil side lamps and tools.

base 94 in.; gauge 56 in.; wheels 30x3½ in.; motor, a pair of opposed cylinders, 6x4½ in., set far in front friction drive, and side chains to rear wheels; 5-passengers; weight 1900 lbs.; price $1500, including mats, horn, five lamps and full tool equipment, ready for extended touring.

Lambert 1906 Model 5. Five passenger detachable tonneau; wheel base 94 in.; gauge 56 in.; wheels 30x3½ in.; motor, a pair of opposed cylinders 6x4, set far in front; friction drive, side chains to rear wheels; weight 1800

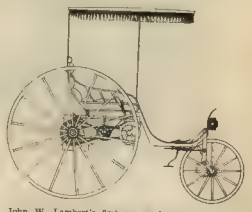
The Lambert, 1906 Line of Automobiles

HUGH DOLNAR.

In 1875 George Lambert, farmer, promised his son John, 15 years old, to take him to a tannery next day to see an engine that ran without a boiler. The lad's disappointment was great on arriving at the place next morning to find that the tannery had burned down the night before, but he appeased his curiosity somewhat by closely examining the burned otto gas engine in the ruins, the only one he had ever seen or heard of. The gas engine lingered in John Lambert's mind, and he made many plans for both steam and gas engine driven wagons, and finally early in 1891 began the construction of a three cylinder gasoline car, by having drawings made in Cleveland by one William Watcholds, a German architectural draughtsman. Blue print here reproduced.

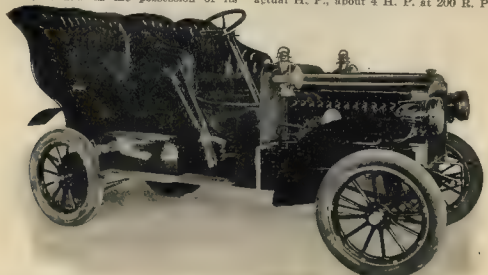
The motor was three horizontal 4-cycle water-cooled cylinders, 3x4 ins.; two chains to a counter shaft; friction clutch selection, with chain to solid axle, and sleeve with balance gear; two speeds forward, no reverse, tricycle, the single front wheel being steered by a double foot-tiller. A hand tiller was added to the car, after it was on the road. The car weighed 585 pounds; had wooden wheels and steel tires; was on the road in 1902; ran well and was considered a great success. This car cost John Lambert $3200 cash, and he declined an offer of $1000 for it. The carburetor was a surface vaporizer, with a flexible diaphragm "compensator" patented to John W. Lambert May 17, 1902; wipe spark ignition, dry cell batteries. This car motor was destroyed by the burning of a building where John Lambert was applying some improvements in 1904. Excepting the motor, this car, one of the very first of American gas engine driven wagons, and perhaps at that time of inception, the most advanced gas engine driven car designed by an American, is now in the possession of its originator, who intends to reproduce it exactly as first constructed.

Car building was not at once begun by John Lambert, who, with his brother and father, began building gas engines in 1893, as the Buckeye Mfg. Company, the product of which is now handled by the Lambert Gas & Gasoline Engine Company, same stockholders, factory at Anderson, Indiana, U. S. A. Over 6300 Lambert Gas Engines have been made and sold up to the date of this writing, Dec. 14, 1905.



John W. Lambert's first gas engine motor car construction drawing, date March 29, 1891. Motor, three horizontal cylinders side by side, chains to cross shaft, friction selection, two speeds forward, no reverse. Tricycle; rear wheels 66 ins., front wheel 24 ins., steel tires, 2 passengers. On the road in 1892, weight 585 lbs.; cost John W. Lambert $3200 cash; offered at $1000; not sold.

John Lambert had the motor wagon in mind all these years and began the present line of Lambert Automobiles by having drawings of a friction driven car made in 1897, side chains to the rear drivers, single cylinder 6x7 ins., nominal 3 H. P., in those days actual H. P., about 4 H. P. at 200 R. P. M.

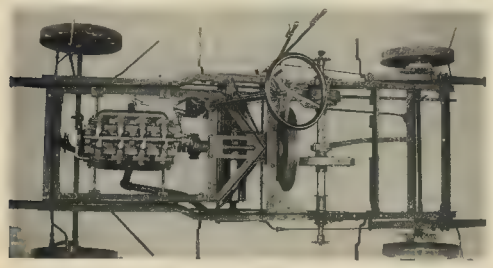


Lambert 1906 Model S, 5 passenger touring car; wheel base 92 in.; gauge 56 in., wheels 34x4½ in.; motor four 4-cycle water-cooled vertical cylinders, tandem, 4¼x5 in.; friction disk drive, side chains to rear wheels; weight 2200 lbs.; price $2000, including mats, horn, five lamps and generator, a Jones speedometer and a full tool equipment ready for extended touring; side doors to tonneau, and also side doors to driver's seat.

outer skin broke up at the end of 200 or 300 miles run, when it was at once destroyed. Various experiments followed. A plain gray iron disk and strawboard faced traversing friction wheel, giving the best results, not quite enough to be sure about, and not quite bad enough to definitely abandon. In the course of these trials a cone of cast aluminum was used as one member of a level friction drive, and showed surprisingly good results, though the material, aluminum was not with the strawboard traversing wheel, and the troubles ended as if by magic. The friction drive drove at last, and drove everything perfectly. Patent was at once applied for, and was issued to John W. Lambert, May, 1904, No. 761,384, the first claim as follows:

Lambert 1905 Model A truck. Paying load 3000 lbs.; wheel base 96 in.; gauge 56 in; wheels 32x4 rear, and 30x3½ in. front; solid "Firestone" tires; motor underneath, in rear of driver's seat, a pair of horizontal opposed cylinders, 5x5½ in., friction drive, side chains to rear wheels; weight 3600 pounds; price $3000, with driver's seat and cushion, two oil lamps and tools. The driver's hood and truck platform to suit business are extra.

"In a power transmitting mechanism, the combination of a pair of shafts, a friction disk carried by each shaft, one disk having a bearing part of aluminum, and the other a fiber part bearing on the aluminum part." This patent carries 6 claims, and it is only with frictions having this patented combination of aluminum and fibrous working faces



Lambert Models 7 and 8 chassis plan. The wheels and axles of all Lambert cars are carried on Timken roller bearings. The motor, 4 cylinders, is carried on a sub-frame, supported forward on the front springs, and at the rear globe-journaled to the chassis frame cross-girt. The chassis frame is supported behind on the rear axle springs, and in front is journaled at the middle of the front cross member to the motor sub-frame. This three-point suspension appears only to Models 7 and 8 of the Lambert cars. The disk-shaft, which an extension driven by a three solid jawed clutch from the crank shaft is carried in two roller bearings. The motor base supporting arms are steel castings. The Lambert chassis frames are all angle steel constructions, no pressed steel frames being used.

at that time credited with the benefit. Later, it occurs to John W. Lambert that possibly the pull was due to the aluminum itself, and a disk was faced with aluminum, and tried

The Moline 1906 Cars

HUGH DOLNAR

The Moline Automobile Company, East Moline, Illinois, U. S. A., incorporated in 1904, has erected substantial factory buildings at East Moline, in a district which has a wide reputation for metal manufactures, and which may be confidently looked to in the near future as a great producer of motor wagons. The Moline Automobile Company has, so far, produced three models of cars. The first was placed on the road in February, 1904. This model was named the "Moline Touring Runabout," detachable tonneau body, wheel base 74 in., wheels 30x3½ in, motor horizontal pair of opposed cylinders 4½x4½ in, four-cycle, water-cooled, planetary speed change, chain to divided rear axle, weight 1400 pounds, price $1000. Fifty of

Fig. 1. The Moline 1906 Model "C," side entrance touring car, for four passengers, can carry five. Wheel base 100 in., gauge 56½ in., wheels 32x3½ in., motor, four cylinders tandem, 3¾x4½ in., sliding gear three speeds forward and reverse, and bevel gear to rear axle. The side entrance door is wide, rear seat 44 in., clear width inside of upholstering, weight 1850 pounds, price $1750, including mats, dusting everything likely to be needed on the road. Equipment much superior to that usually given, in-

these first Moline cars were produced in 1904.

During the season of 1905 the first Moline car, improved in many details and having its wheel base augmented to 86 in., was offered as Moline Model "D," fifty of them being made and sold, and has been again improved and will be offered in 1906 as "Moline Model "G," with these specifications:

Moline Automobile Company's 1906 Model "G," wheel base 86 in., gauge 56½ in., wheels 30x3½ in. rear, and 30x3 in. front; motor, a pair of horizontal opposed cylinders, dimensions increased to 4¾x5 in., weight 1600 pounds, detachable tonneau body for four passengers, can carry five. The price of this car has been placed at $1600, including mats, horn, two oil lamps and a full tool equipment.

The Moline Company's first four-cylinder car was on the road in December, 1904, and fifty of these cars, known as "Model B," were made and sold in 1905. The wheel base was 105 in., gauge 56½ in., wheels 32x3½ in., vertical and tandem, under hood in front, planetary speed change, bevel gear to divided rear axle, detachable tonneau body for five passengers, weight 1900 lbs., price $1600.

For 1906 the Moline Company will offer three models, as follows:

Model "G," detachable tonneau, four passengers, price $1000.

Model "C," four-passenger tonneau, four-cylinder motor, sliding speed change and bevel gear drive, price $1750.

Model "A," five-passenger side entrance tonneau body touring car, very fine, wheel base 110 in., gauge 56½ in., wheels 34x4 in.; motor, four vertical cylinders tandem, 4½x4, sliding speed change, three speeds forward and a reverse, bevel gear drive to divided rear axle, two rear hub brakes on each rear wheel, weight 2400 pounds, price $2500, including mats, horn, two oil lamps and tools.

This new Moline Model "A," which will not be ready for the 1906 New York Show, but which it is hoped to exhibit at Chicago, will be in every particular as good, elegant and luxurious as the Moline Company can produce, although the price has been fixed so low as $2500. The car will not be extremely large, but the wheel base adopted, 110 in., is long enough to ride well on any roads, and more than long enough for crowded streets, and gives plenty of room for five passengers, with space for baggage. The motor driving this fine car is of the first order, cylinders and pistons ground, piston rings ground on three surfaces, ignition by jump spark and storage battery, Hill Precision Oiler, all plain bearings except front wheels, which are on ball bearings, ⅝ and ¾ in. balls, rear axles and propeller shaft on roller bearings, with ball thrust bearings. The whole motive sys-

tem of this car will be of well tried elements whose durability has been abundantly proved by extended use, the Moline Company preferring reliability of performance and certainty of action to possible advantages not fully assured, which might be gained from untried novelties.

The Model "O" is the only Moline 1906 car sufficiently advanced to be fully illustrated, at the date of this writing, December 16, 1905, and is here described in some detail for the first time.

The Moline 1906 Model "O" is a side entrance touring car for four passengers, can carry five. Its wheel base is 100 in., gauge 56½ in., wheels 32x3½ in.; motor, four cylinders tandem, 3¾x4½ in.; sliding gear, three speeds forward and reverse and bevel gear to rear axle. The side entrance door is wide, rear seat 44 in., clear width inside of upholstering. Weight 1800 pounds, price $1750, including mats, horn, two oil lamps and a full and complete tool equipment, much superior to that usually given, including everything likely to be needed on the road.

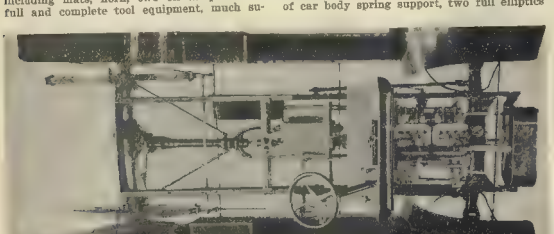


Fig 2. Moline 1906 Model C, chassis plan, overall 100 in., width 27 in., parallel, greatest side depth 4 in.; cross spring in front, full elliptics in rear, rear spring hangers and rear chassis frame cross members of one integral steel casting; one channel section pressed steel cross member over front spring, rear frame cross members, all cold riveted. The aluminum motor base lugs are fitted inside and on top of the frame sides, and same with the gear box lugs, of which that in front is integral with box base, while that in the rear is applied to the box and finished as if all lugs were integral, to fit inside, and hang on, frame sides.

For a full touring equipment, including top, with full side curtains and storm front, pair of gas lamps with brackets and independent generator, odometer (total and trip), extra tire complete with cover and brackets to carry same and an extra storage battery. In addition to the foregoing list, the price of this Moline Model "O" is fixed at $2000, it being the intention to carry this venture into superlatives and make it absolutely and undeniably the finest, best and most completely appointed small touring car offered at its price for the season of 1906.

NOTABLE FEATURES.

The thing to first attract the attention of the experienced observer in the design of this car is the adoption of full elliptic scroll springs in the rear, and a wide heavy cross half elliptic spring in front. This spring arrangement gives the principal practical advantages of three point suspension and fully protects the car body from those destructive twisting strains which are inseparable from any four-spring arrangement, whether half-elliptic or full elliptic, where the chassis frame is one single structure with fixed members only. This full elliptic springs behind with the cross half elliptic in front cannot transfer individual wheel lifts to the chassis frame and body, and practically reduces front wheel lifts and drops by one-half their vertical extent before transferring them to the chassis frame. The rear wheel lift and drop is far better taken by full ellipticss than by half elliptics, and by scroll head springs than by button heads, and the Moline Model "O" rides as would be expected, as smoothly and with as little side sway, body twist and tossing of passengers as the road surface and speed permit, and if driven under a twenty-mile rate will carry its passengers comfortably anywhere.

It may be justly said here, that this form of car body spring support, two full elliptics in the rear and a half elliptic in front, having half the vertical action of the rear springs, bears rigid function analysis as well as any possible form of elliptic springing, where only a single chassis frame is used.

As to power and transmission, the cylinders are well finished, and with sixty-five pounds compression have ample maximum power to push this light car, while for close throttling on the level, the piston area is enough to give full economy.

The drive from the crank shaft to the drivers is all in the most approved 1906 manner, sliding gear, plain bearings up to the propeller shaft and precision oiling, assuring a maximum expectation of reliability.

Ignition is of the very simplest form, with the best elements known in the trade, jump spark plugs, coils of most approved construction and the best storage battery.

The control is extremely simple, is interlocking to the extent of making it impossible

for an inexpert driver to damage the gearing, and having both the ordinary and emergency brakes applied where they will do the least harm, to the rear wheel hubs directly. A brake is a motor car necessity, but it must be borne in mind that it involves a mechanical contradiction. The motor is built with the one intention of pushing its drivers to propel the car forward; the brake is placed to nullify the normal action of the whole car, and should not be so placed as to vex the propulsion system needlessly; in other words, the brake shoes should be applied as near the wheel tire and road surface contact as possible, instead of transmitting the brake effect through a long chain of vital elements to the rear wheels, and thereby adding enormously to the wear and tear of the hardest worked pieces in the motor wagon.

the pump pinion, two turns to one crank shaft turn. This does away with all belt driving. A belt drive is one of the best drives known in experienced hands; machine designers, therefore, are prone to place belts in their constructions, and have no trouble with them until they go into the hands of purchasers, who have not been used to belts all their lives and can and do find ways to make the belts give no end of trouble, so that no belt should ever be placed anywhere in an automobile. So long as water cooling is used the pump and fan will continue to be placed, and the Moline combination of a centrifugal pump and fan, all gear driven, is as good as can be placed.

The Moline pistons are slightly tapered, free in the cylinders, and have four rings, one over the piston pin and the other three above.

Fig. 3. Moline 1906 Model C, motor left side.

THE ENGINE.

The cylinders, see Fig. 6, are cast in dual units, with two exterior exhaust passages, one from each exhaust valve direct, and one exterior intake opening branching to the two intake valves, which permits placing one Y pipe from the carburetor, each single top branch of which supplies the two cylinders of one unit.

The spark plugs are screwed into the intake valve chamber screw caps, and the priming cups are screwed into the exhaust valve caps.

The valve heads and stems are integral nickel steel drop forgings, 45 degree angle, interchangeable, all 1½ in. diameter ports. The cams are steel, hard, applied to the cam shaft, taper pin retention, rivetted. A bronze and rawhide pinion on the crank shaft drives the grey iron cam shaft gear. The centrifugal pump, see Fig. 8, is driven two to one gear multiplication from the cam shaft, making the circulating pump rate same as crank shaft. The fan is gear driven from

The pins are solid tool steel, ⅞ in. diameter, hardened and ground, fixed in the pistons. The rings are 45 in. diameter angle lap, ground on three surfaces.

The general scheme of bearings in the Moline is bored and faced seats fitted with flanged cylindrical half boxes, finished inside and outside. The crank shaft and crank wrists are in nickel babbit bearings of this form. The rods are steel drop forgings and have bronze bushes forced into the solid piston end eyes, oil catch basins and oil hole on top, all splash lubricated. The wrist ends of the rods are full marine type, caps screwed hard on six thin liners, about 1-16 in. total thickness on each side, caps held by driven bolts, castellated nuts and split pine. These rod ends are bored and faced and fitted with nickel babbit half boxes, flanged, finished inside and outside, and interchangeable. Moline compression is sixty-five pounds.

The clutch is a leather faced cone, 15½ in. diameter, 1⅝ in. effective leather face, with four flat double ended springs under the fac-

ing, giving eight points of gradual engagement contact. The male clutch member is aluminum, made as light as possible, of course.

In points of paint and polish, makers of cars built to sell are not usually deficient, however they may scamp workmanship and lower cost of materials to make a big show for little cost. The Moline Company is not so foolish as to belittle the value of high finish nor fine appearance, but it applies the finish to good materials treated with the very best workmanship, with the full intention of both making a brave showing and backing the good appearance of their cars by sound and honest and intelligent treatment of the best materials that can be had.

THE SPRINGS.

Scroll head full elliptic springs 42 in. long 1¾ in. wide, turn on the rear axles and are fixed at the top to a steel casting forming the rear chassis frame member. The front single half elliptic spring, shackled to hangers integral with the drop forged front axle yokes pinned and brazed into the steel tape iron axle ends is 42 in. long by 2¼ in. wide, ribbed and banded. This front spring has a clear drop of 12 in. over the front axle; the front spring is fixed to a pressed steel channel section frame crossgirt, the motor frame front end reaching nearly to this spring carrying cross member.

Two struts, globe joints on the front axle forks, extend about 36 in. back and slightly upward to flat joint drop forged brackets fixed to the bottom and outsides of the frame sides.

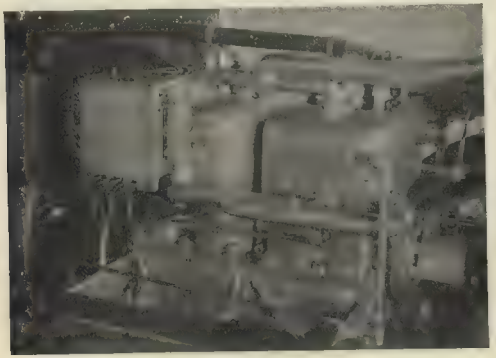


Fig 4. Moline 1906 Model C, left side.

THE WHEELS AND AXLES.

The wheels, 32x3½, have malleable casting hubs, with applied pressed steel internal and external brake drums, 10 in. outside diameter, 9⅝ inside by 2 in. face, finished inside and out, fitted with Raymond brake bands outside and single piece internal toggle joint expanded bronze emergency brakes inside. The exterior ordinary bands are pedal applied. The rear wheels are applied directly to the rear axle tapered ends, with long keys, nut and split pin retention.

The front wheels are on two circles of ball bearings, ½ in. and ⅝ in. dia., on tool steel cones. The rear axles 1¼ in. dia., carried on Hyatt roller bearings with ball thrust bearings.

The front axle is a two-inch steel take, dropped 2½ in. The rear axle is two 2½ in. steel take sleeves, pinned and brazed into the capped globular bevel gear casing. The rear springs are revolvably mounted on the rear axle sleeves.

Two rear axle struts, non-adjustable, reach from near the rear axle ends forward and approach each other where they are fixed to a steel collar back of the steel yoke, which is jointed to brackets fixed to the rear of the aluminum casting change gear box supporting chassis member, in the central plane of the single Spicer universal joint which drives the propeller shaft. This telescopes in the spicer joint hub, and carries the bevel pinion on its rear end, and is carried on Hyatt roller bearings at the ends with a ball bearing at the rear to take the pinion thrust. This propeller shaft is 1 in. dia. and 38 in. long.

The bevel gear is 6 d. p. by 1¼ in. face, hardened. The balance gear is Brown-Lipe spur. The live rear axles are 1¼ in. dia., and are carried on two cages of Hyatt roller bearings with ball thrust bearings inside. The rear wheel hubs are applied to taper bearings

with long keys and outside nuts.

THE CHASSIS FRAME.

See Fig. 2 and caption. The Moline Model "O" chassis is extremely simple, no sub-frame being placed, and the motor base lugs and gear box lugs forming the intermediate frame cross girts between that which takes the front spring, and the steel casting, which takes the rear springs and also forms the chassis frame rear cross member brackets under frame sides. This is one of the simplest and most substantial of chassis frame constructions, the integral spring brackets and rear frame cross member making the fewest pieces in the rear spring assembly, while the channel section front cross members of pressed steel, gives ample strength for the cross spring support.

CONTROL (See Fig. 5).

The clutch rocker is connected with one

Fig. 5. Moline 1906 Model O, control. (Specifications in text.)

This simplicity of construction avoids many joinings of metal surfaces, and so increases the expectation of reliability, while reducing the labor cost.

One Spicer universal joint telescopes on the squared forward end of the propeller shaft, which is on Hyatt roller bearings at both ends, ball bearings to take pinion thrust. Diagonal struts, flat joints, on rear axle sleeve, pass through finished seats in integral yoke lugs, retained by castellated nuts and split pins at each lug end. The yoke is a steel casting, jointed to the applied gear box lug in plane of Spicer joint centre. The front board is pressed steel, wooden panel, and carries the spark coil box.

The front axle is supported by two struts, globe joints to axle sleeve, flat joints to steel pedal and the outside emergency brake lever, which is latched to its quadrant. The right hand pedal applies the ordinary brake only and is not connected with the clutch rocker. The left hand pedal disengages the clutch and releases the change gear.

The latched outer lever when pulled backward first disengages the clutch and then applies the internal emergency brake shoes, incidentally also releasing the change lever.

The change lever is locked against movement so long as the clutch is engaged, and is latched to a five-notch quadrant.

Two small vertical pedals not shown in the illustration are placed to rear of the steering column, the right one is the accelerator and the left one works the muffler cut-out.

The Brown-Lipe steering gear is used. The

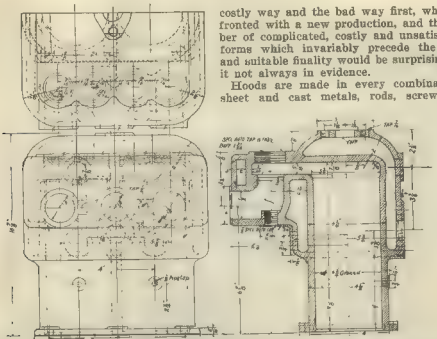


Fig 6. Moline Model C cylinder, working drawing reproduction. The Moline cylinder finishing routine involves a rest period of thirty days between finishing all machine cuts and the final bore-grinding, which is on the new Heald cylinder grinding machine, cylinder held for grinding by the base flange only; bore horizontal, grinding by emery wheel, speed ⅛ mile per minute, water flooded. The Moline cylinders are not annealed after machining.

spark and throttle levers move horizontally to work two vertical rockers, sleeve and solid rod, having a common axis. The throttle hand lever movement must move the accelerator pedal, but the pedal movement does not affect the rocker.

THE HOOD.

Every designer chooses the hard way, the costly way and the bad way first, when confronted with a new production, and the number of complicated, costly and unsatisfactory forms which invariably precede the simple and suitable finality would be surprising were it not always in evidence.

Hoods are made in every combination of sheet and cast metals, rods, screws, nuts and split pins, and have even been offered with leather straps and buckles to keep the unstable elements together.

The Moline hood is one piece of sheet metal, bent to slide over the radiator, two lengthwise doors on top, and the lower edges rolled up in lengthwise scrolls or beads about 5-16 in. diameter, and these beads simply

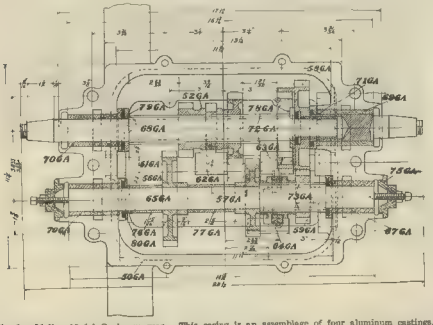


Fig. 7. Moline Model C change gear. This casing is an assemblage of four aluminum castings, the base of which is an oil well, the top box member integral with the front lugs and to which the rear lugs are applied, and the hand hole cover. The shafts are round with integral feathers ending box seats bored and faced, shafts carried in nickel babbitt flanged split bushes, non-adjustable, finished inside and outside, interchangeable, with ring oilers. The gear box lugs reach across and hang on the chassis frame sides, and serve as frame girts. The casing is non selective. The gearing is all hard, all standard 6 d. p. 13-16 face, gear holding faces ground after hardening. The gear shift rod is interlocked with the clutch disengagement action. The motion of the gear shifting lever is transmitted to the gear change sliding member through one single working joint.

slide under full length clips, making a "round dovetail" seating, which holds the thin sides both inwardly and outwardly. Studs on the rear ends of this one-piece hood pass through the front board, retained by bronze wing-nuts. The rear hood door opens for oiler access, and that in front opens to commutator and water tank. This hood can slide far enough forward to fully expose the motor, and yet be well supported in the slide ways.

The Moline Automobile is an offshoot from the Root and Van DerVoort Gas Engine Company, a very successful and constantly increasing business, founded in 1898, and at present working about 150 hands in two shifts covering twenty-two hours per day. The "R. and V." gas engines have an enviable reputation, so that the Moline car motors are the result of ripe and successful previous experience in gas engine construction.

ON THE ROAD.

December 16, at noon, the Moline 1906 Model "C" left the Moline shops, East Moline, bound on a 50-mile cruise under jury rig, tester's seat in front, no foot board, W. H. Van DerVoort, President and Chief Designer of the Moline Company, driving, with C. H. Van DerVoort, Moline Chief Tester, on a strapped-on cushion on top of a dead-weight box dos-a-dos, at rear of driver's seat, and Hugh Dolnar as front-seat passenger. The full elliptic rear springs looked tossy with no load, and the dead weight box with 150 pounds of cast iron nailed up inside was put on at the writer's suggestion; young Van DerVoort is no trifle, and it looked as if the rear springs would act about right with him and the 150 pounds of cast iron on top of them, but there was no place for his feet except on the end of the chassis frame, which brought the young man's knees up to his chin, and didn't look like much comfort, even if he stuck out and got through alive. So a piece of inch by ¼ inch steel bar was bolted on for a foot rest. Each Moline is a roomy suburb, streets paved with natural Illinois black mud, which was frozen on this beautiful, brilliant 16th of December, into the roughest assemblage of ruts, bumps and hollows the writer ever rode over. The Moline Model C is fast and was flying light under the jury rig, and, as the writer had ascertained by private inquiry that Van Der Voort was not afraid to push his own work, the outlook appeared to be about ninety minutes for the fifty miles, and maybe a little bit better than that. But the run did not last anyhing like an hour and a half, and in fact Hugh Dolnar did not take out his watch to look at the time when he got off the car. Later, when he was lying on his back on the frozen road with one seat cushion under his head and another under his smashed left ankle he did look at his watch and it was exactly 12.15, start at 12 flat, total elapsed time fifteen minutes, total running time not taken.

Hugh Dolnar's notes, mental, of the run, were about like this: "Mighty spry car." Bounce! "Van don't need to be told to push her." Bounce! "Mud frozen mighty hard—roughest surface I ever met—wonder how the young fellow is sticking on behind. Wow! But that four-foot wide log wallow across the road was a bouncer! All right behind? Hang on for the turn!" Hugh Dolnar meant a right-angle turn in the road just ahead, not the turn-over he thought the car made the next instant.

The writer sat on the outside and went with the tester's seat when it left its moorings in rounding the turn. Plenty of time to think. Hugh Dolnar wondered how hard the bump on the hard road would be and whether the chassis would fall on him when things settled down quietly.

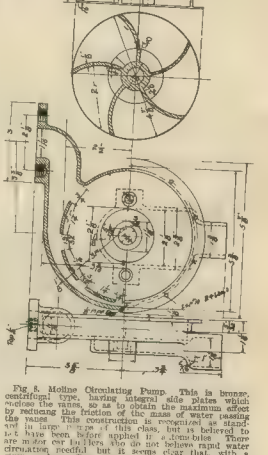


Fig 8. Moline Circulating Pump. This is bronze, centrifugal type, having integral side plates which enclose the vanes, so as to obtain the maximum effect by reducing the friction of the mass of water passing the vanes. This construction is recognized as standard in large pumps of this class, but is believed to have been first applied in automobiles. There are motor car builders who do not believe rapid water circulation needful, but it seems clear that, with a given cooling effect and a given heating effect the nearest approach to uniform low temperature of the entire system will be had with the most rapid movement of the heat transferring medium, or, in other words, that a given radiator will cool a given motor better with a rapid water circulation than with slow circulation. In proof of this seemingly self-evident proposition, the 1906 Moline cars had slow circulation rooms and often boiled the water in the radiator, while with the pump here illustrated the radiator cannot be made to boil by any working condition combination.

But all this was an error in Hugh Dolnar's observations. He was certainly there, but he didn't exactly know what was being done. The Moline Model C didn't turn over at all; it just stood there on the road quiet as a lamb, right side up, no seats, no passengers, the only much hurt one, and finally after everight as a trivett.

The constable who tried to arrest Van Der Voort for fast driving just before the Model C came to the hog wallow strolled up and looked on with much satisfaction, while poor Van Der Voort, the picture of miserable regret, was getting the shoe and stocking off erything was quieted down, doctors sent for, crowds gathered and opinions exchanged, the constable told us he saw the tester's seat supports give way when we bounced through the hog wallow, going about seventy-five miles an hour in his opinion. The turn was close by, and Van had the speed down to not over twenty miles when we rounded the curve, and of course, the seat slid off and dumped the historian into the road. Young Van Der Voort came, too, but he sprawled on the ground, rolled over two or three times and was not hurt at all. Van Der Voort, driver, held on to the steering wheel and stayed on the car.

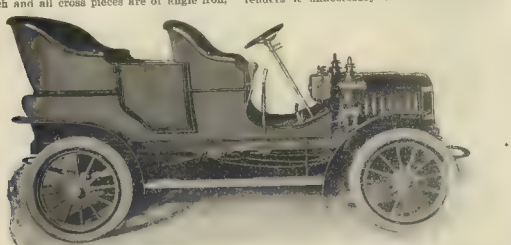
The first doctor to arrive was very cheerful. "Broken? I should say so—smashed all to bits. You'll never use that ankle again." The next one was more familiar with the situation. "Potts fracture," he remarked, after he had moved the fragments sufficiently to determine the precise line of separation. "Stiff joint? Has that tendency. Well, cannot certainly say. Four to six weeks, probably."

It began to look to Hugh Dolnar as if the January Journal was not to have so many new car stories in it as he had expected.

Things were brighter about 4 o'clock same day when Hugh Dolnar was a guest of the Hotel Moline Hospital, with a very notional-as-to-position left foot on two pillows, while Designer Van Der Voort was giving him the figures to complete the Moline Model C story.

The 1906 Auburn

Besides its strong, well constructed chassis, the 1906 Auburn car has a strikingly attractive feature in its handsome, roomy body, the manufacturers, Auburn Automobile Co., Auburn, Ind., claiming that in appearance it equals cars at double the price. The seats are large and are set at a comfortable distance apart. The hood is also well designed. The frame of this car is of angle iron, 2x3x ¼ inch and all cross pieces are of angle iron,



The 1906 Auburn Car. Wheel base 94 in.; tread, 56 in.; 30 or 32-inch wheels; 3½ or 4-inch tires; angle iron frame, double opposed, 5x5, 20 H. P. engine; planetary transmission; weight 1750 lbs.; price $1250.

also a tubular roller bearing axle is used in rear and a solid square axle in front. The frame rests on full elliptic springs at the rear and on semi-elliptics in the front. Thirty by 3½-inch tires are regularly supplied, but 32x4-inch ones may be had on order at additional cost. The tread is 56 in. and the wheel base 94 in.

The 1906 Auburn is driven by a double opposed, 5x5, 20 H. P. water-cooled, gasoline engine. The valves are mechanically operated. A force gear pump circulates the cooling water. The valves are at the ends of the cylinders, permitting the admission of a full charge directly back of the pistons and giving the pistons the full benefit of the explosion, it is claimed. The burned gases also are expelled quickly and easily. The crank shaft is 1⅞ in. in diameter. The wrist bearing is 2¼ in. and the main bearing next to the flywheel 3¼ in., all bearings being of the finest babbitt. The cam shaft is in the lower part of the crank case and runs in an oil bath. This placing of the cam shaft not only eliminates practically all wear, but also renders it unnecessary to remove the shaft to get at the wrist bearing. The pistons are of semi-steel, ground and polished and fitted with three rings, which are ground on faces and edges. Connecting rods are very large and are provided with oil grooves at the top, which convey oil to the wrist bearings. The jacketing provides a large water space about cylinders and valves. The valves are fitted in a cage and can be very quickly removed in case regrinding is necessary. All are interchangeable. A double throw gear pump forces the water through both cylinder jackets, at the same time insuring uniform and thorough cooling of both cylinders. Lubrica-

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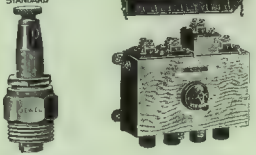

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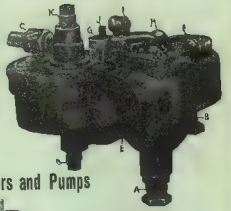

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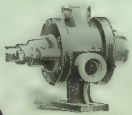

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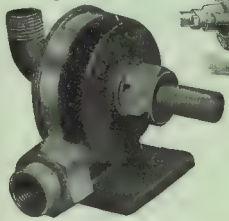

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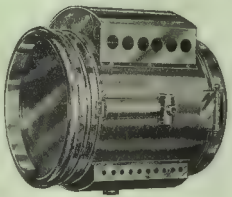

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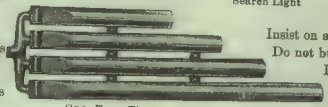

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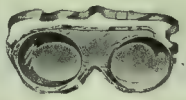

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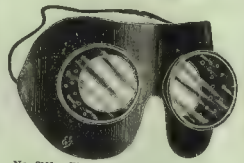

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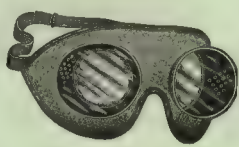

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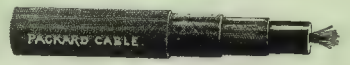

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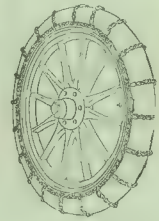

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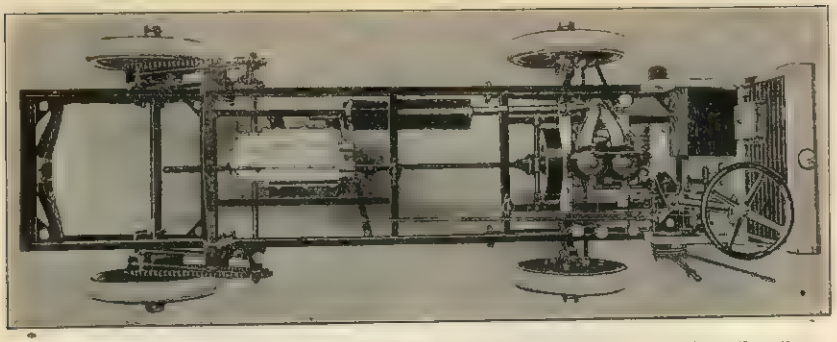


Reliance Truck, chassis plan. This view clearly shows the long, free eveners, one above the other, thru which two sets of brakes are worked. This arrangement equalizes the work applied to the brake levers effectually, and makes it impossible to apply the brakes to one wheel only. External and internal brake shoes, work on drum faces, separated by an air-space, thru forming members of an integral casting. For the support of the two eveners, one for each pair of brakes, steel brackets, each with two enclosed shelves, or long slots, thru them, are applied to the chassis frame sides. The evener ends slide horizontally in these slots, or on these shelves, with entire freedom, are held to the rear by individual coiled springs, and are pulled to the front by wire cables, cables and springs attached to the middle of these long eveners, so as to make one brake action balance the other.

The clutch disengagement is effected by the outside lever before applying the internal emergency brake, and the left hand pedal disengages the clutch only, while the right hand pedal may or may not, at will of driver, disengage the clutch before applying the ordinary exterior brake band. There is a third small pedal on the foot board, horizontal, which opens the muffler cutout.

Two vertical rockers, one on the left of the steering post and one on the right, regulate, respectively, the throttle and the spark positions.

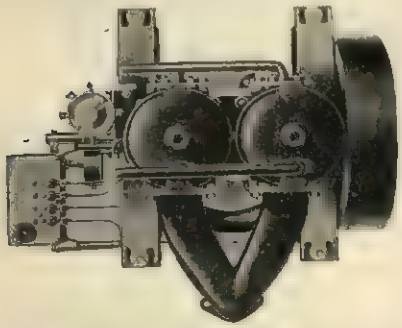
If the clutch is disengaged and the spark is made late, the motor rate is greatly reduced at once, and if the clutch is then engaged the pace of the car is promptly brought down to suit the motor speed, thus giving a prompt pace reduction by moving the spark rocker lever one or two notches. If the spark is retarded without disengaging the clutch, then the car will gradually slow down to the motor rate.

This is the easiest possible slow down for the driver, and as the motor stands it perfectly well, Mr. Wilcox constantly uses the spark in this way, undoubtedly at the cost of a small fuel waste.

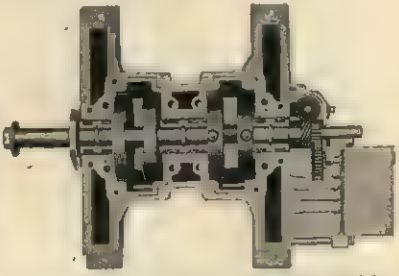
The two brakes, simultaneously applied, bring the car to an instant stop.

Ignition is jump spark, with storage cell and dry batteries, both, is applied to every car. The 2-coil box is above the battery box on the foot board, close in rear of the radiator.

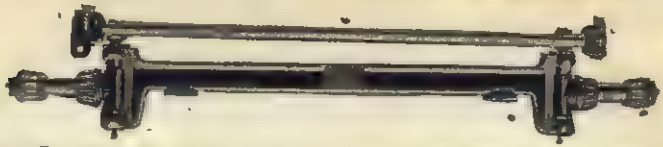
The radiator stands in front, above the foot-board. The top water chamber is piped to the lower water chamber only, and the water pipe to the pump is taken from the bottom of the lower chamber. Water from the top of the water-jackets goes to the top tier of tubes, and thence down, through all tiers of tubes in series to the bottom water chamber, so that the circulation in series and natural, with, however, a rising pipe from the lower chamber to the top chamber.



Plan of Reliance 2-cylinder 2-cycle water cooled motor, showing mechanical oiler, Lavigne, the oil leads, the commutator, and the water piping to the cylinders. The exhaust branched pipe affords a large area of radiating surface, believed to aid materially in cooling. No fan is used.



Plan of Reliance 2-cylinder 2-cycle motor crank-box. The groove around the crank-pits takes an asbestos cord, ¼ dia., for packing, elastic enough to permit the crank-box members to be drawn together, metal to metal, by the retaining screws. The gray iron crank-disks are cored hollow on one side to balance, cavity filled with aluminum. The oiler is spur gear driven, and the commutator and water circulating two-pinion pump are driven by the same pair of spiral gears. The shaft is flanged, to prevent communication, and runs in genuine babbit. The crank-shaft wrists and journals are 1⅝ ins. dia., cranks 2½ ins. throw, set at 180 degrees.



Reliance Truck front axle solid steel forging, I-section. The front and rear wheels are on Timken roller bearings. The knuckle wear can be taken up by a screw adjusted collar.

in front, and linked at the back ends to the chassis side frames.

The rear side springs are linked to the frame sides in front, and are shackled to the cross-spring in the rear.

The rear side springs are 44 ins. long, 10 to 12 leaves, 2½ ins. wide.

The cross-spring is 34 ins. long by 2½ ins., shackled to side-springs and fixed to chassis frame. The leaves are same in cross-springs as in front springs, shorter length giving more resistance.

The struts are crucible steel castings, fitted to the brake-spider hub in the rear, and being tapped for the threaded eye-shank in front, hex nut retention.

The chassis-frame is 156 ins. long by 36 ins. wide, parallel sides, and has two short sub-frames, one for the motor and one the change gear. See illustration. The greatest side frame depth is 4½ ins., width 1 3-4 ins., all 3-16 thick.

BRAKES.

The exterior drum diameters are 13⅛x 2½ ins. face. The internal drums are 11¼ ins. dia. by 3 ins. face. The exterior band is flexible steel, gaudy belting lined, 3-hole lever applied.

The internal, gray-iron, cam-rocker expanded brake-shoe is integral, slotted to take suspension pin, ends pulled together by one coiled tension spring, to rest on cam when collapsed.

The brakes are applied thru two long independent eveners.

CONTROL.

Steering is by a hand wheel 18 ins. dia., two turns for full sweep of front wheels. Steering shaft vertical, in a steel post, driven on a flanged bronze sleeve.

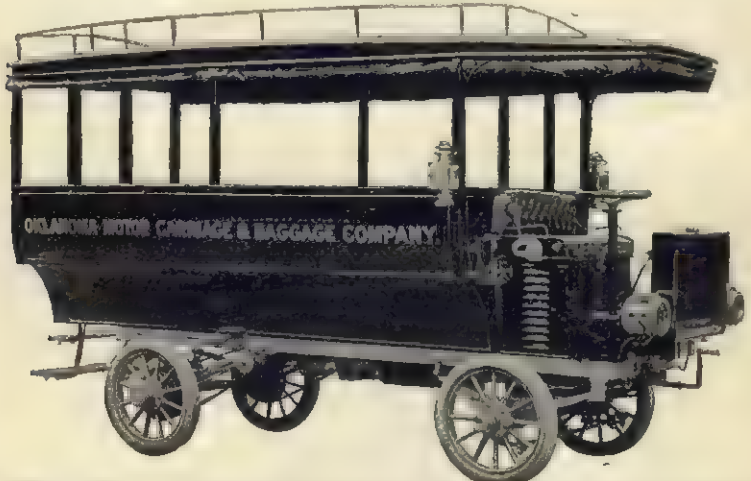
The steering action is worm and worm-sector, hardened steel, adjustable to take up wear. The worm and gear action is encased.

The outside lever is pulled backward to first disengage the clutch and then apply the internal hub brakes by continued movement.

The inside lever stands normally at neutral, if pushed forward first gives low speed and in second notch second speed and in extreme forward notch, high speed. Pulled backward from neutral this inside lever effects the reverse; an interlock prevents any movement of this gear shift lever, while the clutch is engaged.

THE CLUTCH.

The clutch is a leather faced aluminum cone 15 ins. large diameter, 12 deg. angle, which engages the fly-wheel directly. The clutch cone hub is supported on a crank-shaft integral extension, and lubricated by a screw-capped grease cup, carried in the cone



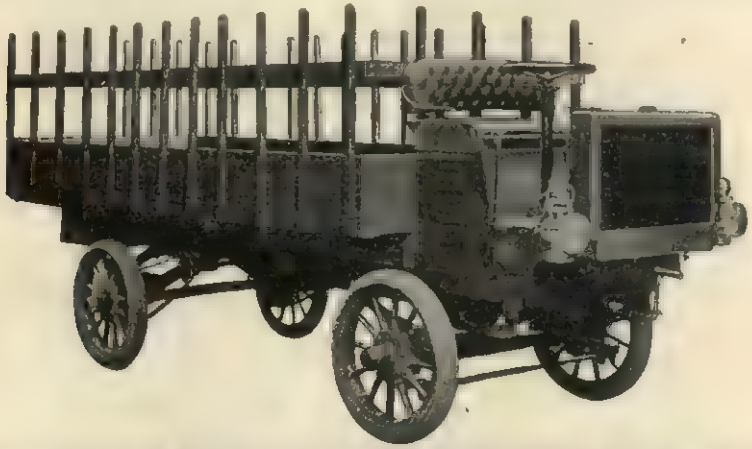
Reliance Omnibus, 20 passengers, general omnibus work, hotels to stations, one of two alike to same company. Same chassis as described for truck. Weight about 4400 lbs. Price, $3500. Can be driven 20 miles per hour

Latest Model Reliance 3-Ton Truck

HUGH DOLNAR

The Reliance Motor Car Company, Detroit, Michigan, U. S. A., is offering a line of trucks, omnibuses and observation cars designed by Mr. H. A. Wilcox, which embody many ideas and features differing materially from preceding practice. The first of these Reliance Trucks was placed on the road last January, and was described in the Journal for April, 1906.

The first Reliance truck has been the subject of constant study and experiment ever since, although some of the very first of the Reliance trucks to be placed in the hands of purchasers have given the highest satisfaction, working steadily with no time at all lost for repairs.



Reliance 3-ton truck. Wheel base, 108 ins. Gage, 56½ ins. centre to centre of tires. Tires, 32x4 ins., solid, all the same. Clear platform space 156x90 ins. Motor 2 water-cooled, 2-cycle cylinders, 5⅝x5 ins., cylinders cast separately, integral heads and water jackets. Nominal 30 H. P. at 900 R. P. M. Compression not stated. Weight, about 3800 lbs. Paying load, 6000 lbs. Price, $2750 for chassis only. The chassis has frame 36 ins. wide by 10 ft. 6 ins. long, back of driver's seat. Bodies may be built any width up to 6 ft., and any length from 10 ft. 6 ins to 13 ft. Price includes 3 oil lamps, set of tools and odometer.

The marked feature of the Reliance trucks and large passenger cars is the use of the 2-cylinder verticle 2-cycle motor, described in detail in our April number, which is showing extremely well in heavy service.

The brake system has been carefully worked out, and is now shown in excellent form, exterior and interior rear-hub brakes, two independent systems working on and one brake-drum on each rear wheel, with a cooling air space between the exterior and interior drums.

A great number of detail improvements have been made throughout the chassis, and the more important of these changes are shown in the following illustrations and description.

NOTABLE FEATURES.

All wheels are on Timkin roller bearings. The springs are extremely easy, making high speed comfortable; this is of advantage, as it makes the quick return of the unloaded car probable. The brakes have long and well-supported eveners for both the exterior and interior shoes. The motor is 2-cycle, no valves, 2-cylinder, starts on the spark and is so easily cooled that the top of the small radiator is seldom warm to the touch.

The flexibility of the motor under spark regulation only is surprisingly great, merely moving the spark-lever sufficing to perfectly control the pace on level roads, hard surface, without resort to brake or throttle.

The carrying capacity of the Reliance truck is large, 6000 lbs. paying load for less than 4500 lbs. weight of the truck itself.

AXLES.

The rear axles are made 2 ins. sq. steel forging for lighter service, and 3 ins. square for the heavier trucks.

All the Reliance trucks have the same motor, chassis frame and change gear, but the high speed ratio, the axles and the springs are changed to suit lighter or heavier requirements

The front axles are same I-beam steel drop-forgings in all these trucks, and all wheels are on Timkin roller bearings.

THE SPRINGS.

These are half-elliptic in front and platform in rear, and are always the same length and width in all Reliance trucks, but are varied in number and grading of leaves to suit light and heavy loads.

The front springs are 44 ins. long by 2½ ins. wide, 8 to 12 leaves, and are pivoted

pleasantly warm to the hand pressed on it. Mount Clemens, 23 miles out, was reached at 5.50, and some time was spent in filling and lighting lamps and unsuccessfully endeavoring to procure seats for our tourists, so that it was 6.40 when we started on the straight away Gratiot Road run back to Detroit, turning into the Fort street factory door at 7.45 P. M., an hour and five minutes for the 21 miles run. No tools used, nothing touched.

The total distance run, as recorded by the odometer, was 49½ miles. Gasoline burned was 6 gallons. The weight of the car with the driver and passenger was 4680 lbs., and the tourist party of 6 weighed well toward 1000 lbs., making the average load about 580 lbs.

The Reliance truck run was notable in several important particulars. First, and of great value, is the excellence of the springs, which give smooth riding, as easy as many touring cars. It is of great advantage to have a truck speedy and easy riding, because these qualities, possessed in superlative degree by the Reliance truck, make for fast work and safe carriage of fragile freight.

Second, the surprising coolness of the radiator, which was cooler than the hand most of the time, and was never so warm as to be uncomfortable to the hand pressed against the radiator top water chamber.

Third, the extreme flexibility of the motor obtained by advancing and retarding the spark merely, which enables the driver to regulate the rate of the truck promptly without applying brakes or changing the throttle. The sliding gear changes readily, but was seldom used except on the reverse. In deep sand, 3 or 4 miles of the road between Grosse Pointe and Mount Clemens, the truck showed at its worst, as the motor kept the drivers slipping and the steering was very difficult. But with the car on second speed the radiator was barely warm, even in this sand, sometimes on low speed.

The motor starts promptly, often on the spark, and almost invariably at the first pull of the crank, and makes no crank-box explosions. With the muffler cut out the exhaust is only loud enough to be plainly heard, showing that the stroke terminal pressure is very low, which accounts for the fuel economy and the small cooling effect needed.

The brakes are very powerful, and give the driver confidence, as he knows he can stop the car in a third of its length, at 10 miles per hour. The steering is extremely easy on hard road surfaces, and on the Boulevard the car was run "hands off" for long stretches. The high speed of the car is made available by the good brakes, the perfect motor control and excellence of the springs, which saves wear and tear of the driver's body, and of freight in transportation.

The Reliance truck, with its 2-cylinder 2-cycle motor, is giving the highest satisfaction to users, and can easily do the work of at least five good two-horse trucks, single time, or of ten-horse truck teams, if run double shift, with two drivers. This statement exceeds the claims made by the Reliance company, but is below the powers of this truck under good management, in the writer's opinion.

Steel Commercial Vehicle Wheel

The Turner & Fish Co., 17 to 21 Quincy St., Room 406, Chicago, Ill., manufacturers of steel wheels for automobiles, which we have described in a previous issue, are making a special type of wheel for heavy commercial cars and trucks. This wheel consists of two sheets of high carbon two-pass cold rolled steel, each disc being shaped so as to give the appearance of ordinary tubular spokes connected by webbing. These discs are fastened by means of riveting, to the edges of V-shaped pieces of steel which separate the two discs from each other, this manner of spreading the discs making it possible to support the outer edge of wide rims. It will be easily understood that this spreading makes this wheel particularly adapted to heavy commercial machines, giving greater strength to the wheel and therefore making it particularly valuable for carrying heavy loads.

Perspective view of Steel Commercial Vehicle Wheel.

The Terre Haute Brewing Company, of Terre Haute, Ind., have placed an order with the India Automobile Company for several light Cadillac trucks, which are being built from Model M Cadillacs, and a two-ton Knox truck, fitted with a 4x5-foot platform. The trucks, as rapidly as completed, will be placed in delivery service in Indianapolis and Terre Haute.

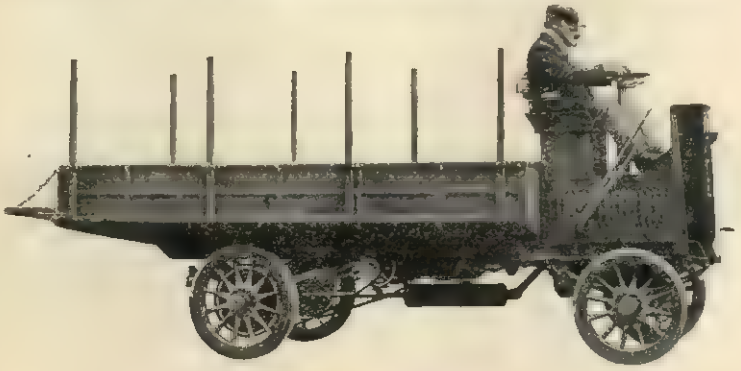
Wisconsine Condensed Milk Company, of No. 91 Hudson street, New York City, has purchased three Atlas trucks.

Frank Herschede, of Cincinnati, Ohio, jeweler, recently purchased an electric delivery wagon.

J. F. Gephart, an express agent of the Southern Ohio Express Company, in Devion, Ohio, has substituted a motor vehicle for his horse-drawn wagons

COMMERCE TRUCKS

"Fit for Commerce" "Fit for Commerce"



30 H. P., 4 cylinder vertical motor. 3 speeds forward, one reverse, selective type, sliding gear transmission. Double chain drive.

CAPACITY 2½ TONS

The "Commerce" truck is designed for all branches of commerce. It is built strong and thorough thruout and the highest grades of steel are used. All details are thoroughly worked out, and the car stands as the most accessible truck on the American market. Any type of body furnished. Write for particulars to

American Machine Mfg. Co.

DETROIT, MICHIGAN

Fuel tank is rectangular, galvanized iron, capacity 22 gallons, 200 miles range, placed under the driver's seat.

ACCESSIBILITY.

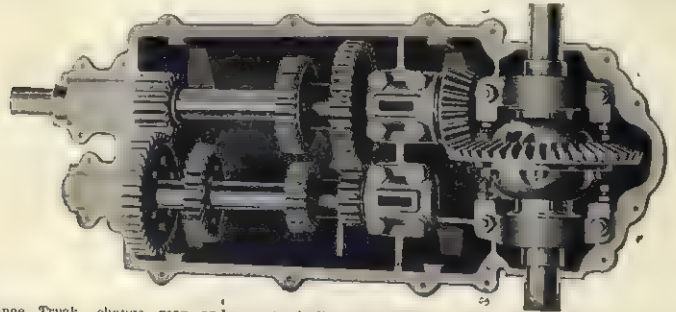
Three sections of the foot-board are loose, giving access to the commutator, pump and lubricator.

The change gear is accessible through a trap door in the truck platform. Every part of the mechanism is accessible, readily, to the driver standing on his feet.

The carbureter used has one single adjustment, that of the needle valve, only. Once set the valve requires no more attention so long as it is free from dirt.

ON THE ROAD—TOURING ON A RELIANCE TRUCK.

At 4.00 P. M., Saturday, Sept. 8, a Reliance truck left the factory, Fort St., Detroit, driven by Mr. Wilcox, with Hugh Dolnar passenger. The start was made at the end of a hot, vexatious day, with the intention of a short run only, which the passenger expected to provide a robust shaking up and period of general discomfort, well fitted to accentuate the close of a disappointing day.



Reliance Truck, change gear and countershaft, cover removed. The gearing is steel, all hardened, plain bearings for the side and line shaft; cross-shaft on Timken roller bearings each side of the bevel gear, and on Hyatt roller brackets in steel castings rigid brackets fixed to frame sides, for sprocket ends of the countershaft. The gear box and cover are both aluminum. The bearing caps have their oil ways covered with wire gauze. The sliding gears are integral, on the squared line shaft. The stationary side shaft large gears are bolted to integral flanges, and the two smaller ones are integral and keyed to the shaft.

Wilcox put the truck, new, and never driven before since it was painted, over to Jefferson avenue, striking an eighteen or twenty mile clip the first thing, and handling the big truck as if it was a touring car, exciting surprise and apprehension on the part of the passenger as the truck swung round the corners and it appeared like a long fall from the high driver's seat to the pavement. It also seemed to the passenger an evidence of obsession, when Mr. Wilcox remarked that he really enjoyed driving a Reliance truck more than pushing a touring car. The radiator close in front, the high perch and the solid tires and the stiff springs appeared to Hugh Dolnar to be anything in the world rather than probable factors of enjoyable motoring, and he made no reply to Mr. Wilcox, thinking it was a case of parent and baby, and that silence was suitable.

After a few squares' run on Jefferson avenue the passenger all at once discovered that he was not being shaken up, and that the truck was steering beautifully, and that the radiator was not roasting his feet, nor was the foot-board distressfully vibrating. The pace was fully 20 miles; we were passing everything, trolleys, runabouts, touring cars and carriages, the brakes were able to stop the truck short, and Wilcox was handling the big thing as if it was a runabout, so that long before Belle Isle Bridge was reached the run changed in its aspect from a duty, disagreeable and unavoidable, to be shortened as much as decent show of interest would permit, to a pleasure to be prolonged to the limit.

The Reliance truck can make 25 or 30 miles easily, unloaded, most of the time the top of the radiator feels cold to the hand, there is no nerve-shattering vibration of the foot-board, and, incredible as it seems, the springs are easy and transport the passenger in real comfort, actually better than the riding of the front seat in many touring cars, and the body of the truck is carried on the platform rear springs better than the front on the half-elliptics.

Above the Bridge we swung into the Boulevard and hustled for fair on the smooth surface to the Groose Pointe road, which was very dusty, with a big touring car a mile or so ahead of us. We were above the most of the dust left behind by the touring car, which we passed at the end of the rough clay road at Grosse Pointe, and finally drew up at a road house at 4.40, distance 15 miles by odometer, 4.45 saw us on the road headed for Mount Clemens. About 2 miles beyond we were hilariously saluted by a party of six tourists, two of the necessary and four of the delightful divisions of the human race, and took them with us, cushions and canvas rolls which happened to be aboard when we left the factory, affording low seats on the truck platform, and drove on to Mount Clemens, over a bad road with stretches of deep sand which forced the truck to second speed, made steering difficult, and warmed the radiator so that it did not feel cold, but at no time so as to make it un-

Experience of Commercial Motor Car Users

Quicker Delivery at Less Cost

Henry C. Weber & Co., dealers in hardware, Detroit, Mich., have been using a "Rapid" delivery car for the past six months, and report that the car had replaced three horse-drawn wagons, and makes from 6 to 10 trips daily, covering a territory of 25 miles. They state that the car has not only given them a quicker and more satisfactory delivery service, but that the cost of operating has been considerably less than with horses.

The following comparative tables show the cost of doing the Henry C. Weber & Co. delivery by both the old and new method:

RAPID DELIVERY CAR

Average cost of gasoline per month	$13 00
Average cost of lubricating oil	2 50
Average cost of batteries per month	4 00
Up-keep expense per month	$19 50
Wages of chauffeur and helper	110.00
Total expense per month to operate	$129 50

COST OF HORSES.

Cost per month feeding each team	$10 00	
For the three teams replaced		$30 00
Wages of driver and helper, $65 per month, or for the three		195 00
		$225 00

In regard to repair expense on the automobile the company state that the car was bought under a one-year guarantee and that it had cost nothing as yet for repairs.

The Commercial Transit Co.'s. Experience

The Commercial Transit Co., of Springfield, O., who have in operation an automobile line between Springfield and Jamestown, O., furnish us with the following particulars regarding this service. The equipment consists of three 16 H. P. Oldsmobile Wagonettes, which make five round trips of 37½ miles daily. The load varies from two to fifteen passengers. Mr. John B. Milligan, of the above company, state that the machines, which have now been in use about one year, are practically as good as new, and are running as well as ever. Mr. Milligan furnished us with the following figures, showing the cost to operate these machines:

Average cost per month for gasoline	$19 82
Average cost per month for lubricating oil	4 50
Average cost per month for batteries	3.00
Average cost per month for repair and repair parts	8.00
Chauffeur's wages, at $15 per week of 7 days	60 00
Total expense per month	$95 32

Mr. Milligan further says that they consider the care of their own cars the more satisfactory and daily inspection and tuning up a factor to successful operation.

Asked as to what make and type of machine he considered the more practical for a passenger service of this kind, replied: "Any good gasoline machine having enough power to negotiate any kind of roads, and, above all other things, having accessibility." Also, that he preferred a water-cooled motor, sliding gear transmission, double chain drive, solid tires and 32 in. or larger wheels.

Motor Car Drivers Quicker

Chas. E. Lincoln & Co., Inc., coffee and tea merchants, of Hartford, Conn., have used a Type D-3 Knox air-cooled motor truck for a year past. The truck makes a daily average of 15 miles, hauling loads up to 3000 lbs. The average cost per month for fuel is $15 and for lubricating oil is $1. The average cost per month for repairs is $41, this amount including everything necessary to keep the machine in perfect condition, and includes repainting and new tires. Ten dollars per month is paid for storing the machine and $70 per month is paid to the operator. This machine has displaced two horse drawn wagons, the drivers of which each received $50 per month.

Lincoln & Co.'s experience have convinced them that the air-cooled car is the most satisfactory for them as they must deliver their goods in both hot and cold weather, and they state that it is a great advantage to have goods delivered by a more intelligent man. They have found that when a man drives an old truck horse which is slow moving, he will get to moving slowly himself in loading and unloading, whereas the same man on a motor truck will soon acquire the habit of moving fast and do very much more work. He assimilates life and speed from the engine and machine he drives.

Ostermoor & Co., 116 Elizabeth St., New York city, have been using a 10 H. P. Knox car for 18 months. They find that they use about 150 gallons of gasoline a month and that the cost of lubrication is about $2.50 per month. They haul an average load of 500 lbs., making an average of 50 miles daily, divided into three trips of about 10 calls per trip. They have not spent a cent for repairs in the past six months. They pay $20 per month for storage, $60 per month to the operator and $35 per month to helper. During the 18 months the car has covered 17,860 miles. It has replaced three horse-drawn wagons.

Pillsbury-Washburn Flour Mills Co., Limited, Minneapolis, Minn., have operated two electric trucks manufactured by the Vehicle Equipment Co., with a fair degree of success, and they believe that under ordinary conditions the commercial motor truck is a good proposition.

S. S. Olds, Jr., has severed his connection with the Olds Motor Works, of Lansing, Mich. He was formerly manager of commercial vehicle department.

The Knox Motor Truck Company, of Springfield, Mass., manufacturers of the Atlas trucks, have opened a Chicago branch at 420 Wabash avenue, under the management of Walter Jones.

Sight-Seeing Service Profitable

R. W. Whipple, the well-known tradesman of Binghamton, N. Y., had a very successful season last winter operating a sight-seeing service in Daytona, Florida. The car used is a Packard and in three months prior to April 1 it made 10 round trips daily over a popular route, earning upward of $2800. It ran Sundays, as well as weekdays, and frequently made extra trips on moonlight nights, never being as much as 10 minutes late in making its scheduled trips. The total repair bill for the season was about $15. This covered the cost of a new commutator lining and a new set of pump gears, which were spoiled by using sulphur water. Eight gallons of gasoline was used daily and the storage charge was $3.00 per week, making the total expense for operation about $15 per week outside of driver's wages.

The secret of the low repair expense is the fact that careful inspections were made daily, the whole machine being looked over every night, regardless of whether any one got any sleep or not. New chains and sprockets will put the car into the pink of condition for another season's use and had it not been for other interests Mr. Whipple would have run the car all summer, as he was more than pleased with the financial result of the venture and considers it an excellent investment.

The daily mileage covered by this car was 67 on the regular trips, and it frequently covered 10 to 25 miles additional in night trips with charter parties, towing racers, etc. People preferred riding in the motor car, even where they had a choice of using the street cars instead, gladly paying several times as much for the motor car transportation. Mr. Whipple attributes the popularity and success of a motor car service to being on time, and advises running over the route, even if no passengers are secured.

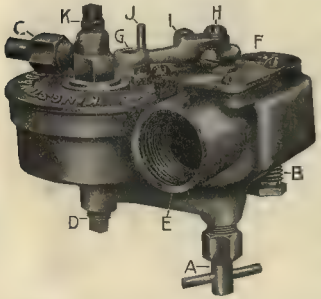
A profitable source of revenue is the package express business, which can be carried on in connection with the passenger service, and therefore costs nothing, representing clear profit. Arrangement is made with merchants to hang out call cards and the motor car stops to get packages for delivery to customers who have 'phoned in orders, picking up, also, passengers who have stopped to shop. The operator of a motor bus can also make money by acting as purchasing agent for suburbanites who do not want the bother of shopping. The purchasing agent charges the suburbanite a commission for the service and gets a commission also from the merchant for bringing him the business. While these commercial uses of the car are not so profitable per trip as the sight-seeing service, the latter has the disadvantage of not bringing any revenue on rainy days. Mr. Whipple says a car should not be run over 15 miles per hour in such work, and that at this speed a very heavy car is not needed. All expenses are kept down by the use of a light car.

Sight-Seeing Packard Car Used in Florida by R. W. Whipple.

The Iowa Automobile Company, of Des Moines, Ia., have placed a 35-passenger sightseeing gasoline automobile in service.

KINGSTON

Type-K Carburetor



1906 Model

Light Valve
Automatic Type

This Carburetor will give perfect control and more power than any other.

Over 31,000 Kingston Carburetors in Use.

Byrne, Kingston & Co.

KOKOMO, INDIANA, U. S. A.

... See Us at Chicago and both New York Shows ...

KINGSTON MUFFLERS

Are being adopted by nearly all Automobile and Motor Boat manufacturers.

Made in all sizes and shapes for any and all kinds of service.

Write for Catalogue and Price List of the Kingston line.

Over 12,000 KINGSTON MUFFLERS in Use

WHICH PROVES THEIR MERIT

Byrne, Kingston & Co.

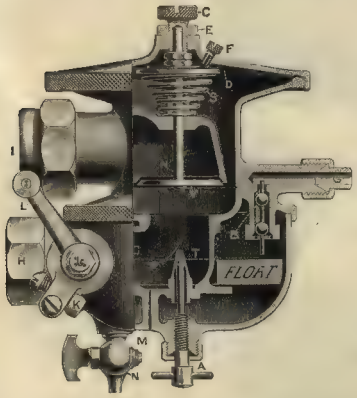
KOKOMO, INDIANA, U. S. A.

See us at Chicago and both New York Shows

KINGSTON

TYPE-D AUTOMATIC

CARBURETOR



Absolutely the most perfect carburetor on the American market.

Diaphragm and air control which is perfect.

Fully Guaranteed.

Over 31,000 Kingston Carburetors in Use

Write for Catalogue and Price-list of Kingston's Line

Byrne, Kingston & Co.

KOKOMO, INDIANA, U. S. A.

See Us at Chicago and both New York Shows

THE MARMON

"A Mechanical Masterpiece"

Front wheel and opposite rear wheel each raised over a foot

A Show that Lasts All Year

We shall demonstrate at the Armory Show, New York, and at other shows.

But, for the man who doesn't go, we offer here an Automobile Show that needs very little explanation, even to a novice.

The Marmon is **naturally** flexible. You can see that.

It moves over rough roads with an easy, gentle sway—a very luxury of motion—unknown in any other car. You can see why. Its running gear adjusts itself instantly and **Without strain** to any position which the road demands.

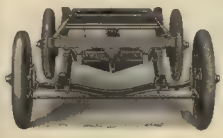
Other cars have but one frame. Some have an attachment called a sub-frame, but it is all rigid. The only flexibility attained in other cars is an uncertain variety provided by the springs and tires, and these do not eliminate jolts or sufficiently protect the costly mechanism from binding, twisting strains and ruinous friction. Anyone knows that the best of tires can not and do not endure the excessive and unnatural burden thrust upon them by the cumbersome, unyielding construction.

Observe that, in the Marmon, raising one wheel does not affect the other three wheels in the slightest. The two frames operate independently of each other, due to a **patented** exclusive Marmon feature.

Double Three-Point Suspension

Each frame is suspended on three **pivotal** points. The sole duty of the upper frame is to carry the luxurious solid cast aluminum body.

The lower frame carries the entire power plant. Motor, transmission, driving shaft and live rear axle are a unit in operation—always in perfect alignment, free from twisting and binding strains, no matter how the two frames are raised, lowered or tilted. The Marmon driving shaft is therefore straight and rigid—without flexible couplings or power wasters of any sort. This means power transmission as perfect as can be had in a stationary power plant



Normal Position.

Front Wheel Raised Over a Foot. Body Level

HOLSMAN

Model No. 3

FOUR YEARS OF SUCCESS. Built high enough to travel the country roads like a carriage. Clears the center of the road by eighteen inches, and therefore has **twice the advantage** of the ordinary machine in muddy, rutty, rough or rocky roads. Has large wheels, solid rubber tires, and **rides like a carriage.** The Holsman exclusive patent marks an era in automobile building. It **does away with** all live axles, friction clutches, differential gears, pumps, etc. Reverses without extra gears.

No water to freeze; no puncture troubles; no odor; new hill-climbing power

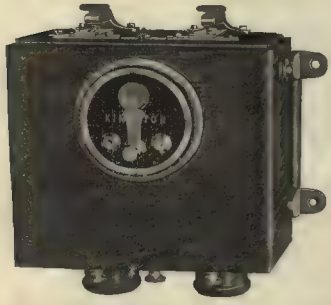
Model No. 6

The Holsman Automobile Co.

MONADNOCK BLOCK, CHICAGO, ILL.

Ask for Catalogue C

KINGSTON SPARK COILS



Are absolutely the best made and the most elegantly finished coils ever placed on the market. They are strictly hand made in our own laboratory under our own supervision, where every winding is made by hand, after which they are thoroughly insulated and tested, assembled and all interior connections insulated with rubber and tested, after which the sealing compound is added. They are then mounted in elegant lock cornered cases which are hand polished, the finish being moisture and weather proof and fitted with nickeled metal trimmings with vibrators having a wide range of adjustment, making them suited to a very weak or strong battery or magneto. All dash coils are of the individual unit system fitted with a metal rimmed, two-throw switch.

Byrne, Kingston & Co.

KOKOMO, INDIANA, U. S. A.

SEE US AT CHICAGO AND BOTH NEW YORK SHOWS

KINGSTON

PLAIN

COILS AND PLUGS

Our Plain Coils are of the same construction exactly as our dash coils, fitted with the same vibrator. There are no cheap special jobs, they are all alike, you buy a Kingston you get the best and at the right price.

KINGSTON

Spark Plugs

ARE THE BEST THAT CAN BE MADE AND AT THE RIGHT PRICE.

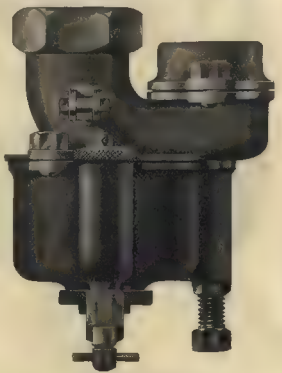
Byrne, Kingston & Co.

KOKOMO, INDIANA, U. S. A.

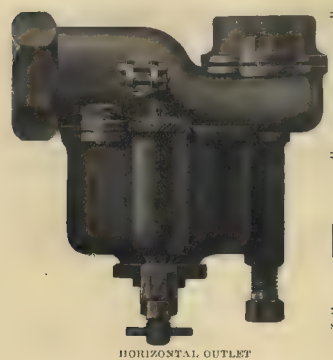
See Us at Chicago and both New York Shows

KINGSTON
Type-Kc CARBURETOR

This Carburetor is of the Central Float Chamber type, with weighted valve. Part of the air is taken through center of float chamber, which opening is adjustable, is also fitted with light metal auxiliary air valve seating on leather, is fitted with a piston throttle of the balanced type. Is noiseless and automatic.



VERTICAL OUTLET



HORIZONTAL OUTLET

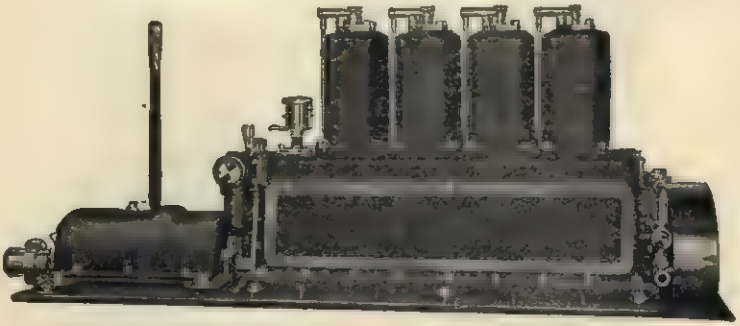
Over 31,000 Kingston Carburetors in use

Byrne, Kingston & Co.,

Kokomo, Indiana, U. S. A.

SEE US AT CHICAGO AND BOTH NEW YORK SHOWS

Notable Features of RALACO Marine Engines

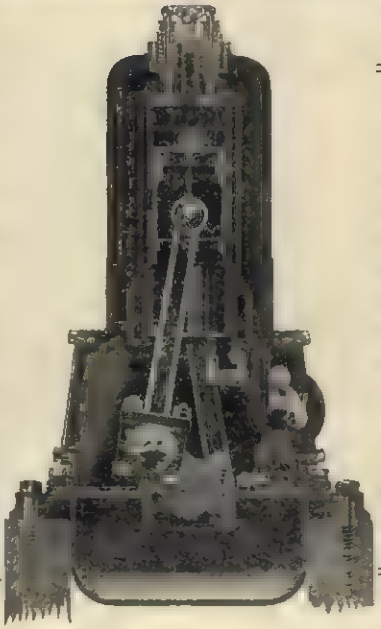


Neat and Compact Design.

Perfected system of lubrication without troublesome sight feeds and oil tubes.

No exhaust or inlet piping on side of cylinder.

Exhaust and inlet valve mechanically operated by one cam and one push rod. This system greatly reduces the number of valve gear parts, and is also the reason for the RALACO being the most quiet engine on the market.



Valves are set in cages in the cylinder head and are instantly removable. All working parts within the housing are accessible by removing cover which extends full length of the engine.

Our literature tells of many other desirable features in design and construction of the RALACO.

SECTIONAL VIEW

The Rathbun-Lacy Company

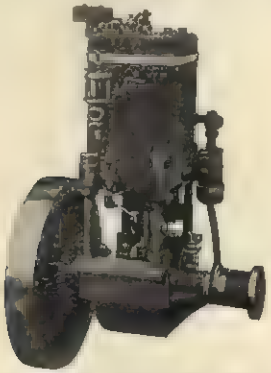
920 Water Street, - TOLEDO, OHIO.

New York Office, 155 Chambers Street.

"Moore" Gasoline Marine Motors

Palmer-Moore Marine Co., Syracuse, N. Y., manufacture a line of 2-cycle marine motors which possess the exclusive feature of having open crank cases. The "Moore" motors are made in 1, 2 and 3-cylinder forms regularly, but 4-cylinder types can be furnished on special order. The stock models are: G, 1½ H. P., single cylinder, 3½x3, weight 75 lbs.; I, 3 H. P., 2-cylinder, 3½x3, weight 125 lbs.; A, 5 H. P., single cylinder, 5x4, weight 225 lbs.; B, 10 H. P., 2-cylinder, 5x4, weight 400 lbs.; C, 15 H. P., 3-cylinder, 5x4, weight 575 lbs.; E, 20 H. P., 2-cylinder, 6x5, weight 630 lbs., and F, 30 H. P., 3-cylinder, 6x5, weight 895 lbs. The 4-cylinder special models give respectively 20 and 40 horse power.

As stated above, the crank case is open. Instead of the action of the piston drawing the explosive charge into the crank-case, there compressing and forcing it into



"Moore" Model A Marine Motor. Single cylinder, 5x4 inches, developing 5 horse power; base 18 inches wide; height of motor over all 21 inches; width between keelsons, 9½ inches; weight, 225 lbs.; flywheel, 16 inches.

the cylinder, as in the regular two-cycle engine, it is drawn into the base of the cylinder through an intake-port near the bottom, and there compressed and forced to the top of the cylinder through a passage in the cylinder-wall. By this construction the compression-chamber is in the base of the cylinder itself instead of in the crank-case, thereby eliminating any possibility of leakage and overcoming all troubles from that source. Accessibility to working parts is another advantage gained by this construction. It is claimed, too, that a more uniform mixture is furnished to each cylinder, as one cylinder cannot suck in part of another cylinder's charge through a leaky bearing. No cylinder oil can get into the mixture, which feature elimiates fouling of the plugs. The small area of the compression chamber makes the pressure there greater than in the cylinder and therefore back firing is not possible.

The crank shaft of the Moore motor is below the line of the motor bed, and this gives steadier running and greater rigidity. The piston rings are ground to fit the cylinder, after being slotted, which insures a perfect fit and good compression. The connecting rods are bronze castings, well ribbed for strength, and bushings are adjusted without disturbing other parts of the motor. A plunger type circulation pump is used, driven by an eccentric from the crank shaft. It runs in either direction. All bearings are lubricated from sight feed oilers. Ports are long horizontally, so that a small piston movement will open them, and the exhaust port opens first to allow escape of the burned charge before the new gas is admitted. Jump spark ignition is regularly fitted, but the make-and-break type will be fitted if desired.

New Houle 2-Cycle Marine Motor.

A. J. Houle Motor Works, 572 East street, Holyoke, Mass., have just placed on the market an improved model of the Houle 2-cycle vertical gasoline marine motor, which is made in single or double cylinder form. Three sizes of cylinders are made, 3½x3½, 4½x4 and 5x5½. The single 3½x3½ cylinder motor develops 2-horse power and weighs 80 lbs. The base is 8x12 inches, height above shaft, 11½ inches and diameter of fly-wheel 12 inches. It lists at $57. The 4½x4 single cylinder motor develops 4½ horse power, measures 12½ inches above shaft, weighs 150 lbs., has a 14-inch fly-wheel and a 9x12 inch base. Price is $85. The largest size single cylinder motor, 5x5½, weighs 250 lbs., is 17½ inches above the shaft, has a 19-inch fly-wheel and a 10x16¼ inch base. Price is $143.

The double cylinder motors develop 4, 9 and 14-horse power, respectively, listing at $100, $155 and $230. Prices in all cases include complete outfit with bronze propeller.

The cylinder and head are cast in one piece. Large hand holes in the base give easy access to working parts. The division of the cylinder and crank case is on a line with the centre of the crank shaft. Provision is made for taking up wear of the crank shaft bearings and connecting rod bearings. A double oiling system is employed.

J. W. Smallwood, Akers, La., desires to find a second-hand marine engine of about 50 to 60 H. P. with shaft and reversing gear for a boat whose hull is 38 feet long and 12 feet beam.

The regatta at Point Clear, Ala., Sunday, August 12, was a great success in every way. The power boat race, which was considered the event of the afternoon, had several entries.

MOTOR BOAT
DEPARTMENT OF THE
CYCLE AND AUTOMOBILE TRADE JOURNAL

Contents Motor Boat Department

Batavia 6 H. P. Marine Motor 216
"Commodore" Spray Hoods 220
The H. M. Co.'s 30-Foot Launch 216
Hudson River Carnival 212
The "Monarch" Marine Engine 220
"Moore" Gasoline Marine Motors 215
The "Morse" Spray Guards 218
Motor Boat Coming Events 212
New Delaware River Plant 220
New Houle 2-Cycle Marine Motor 215
The "Parker" Air Pumps 223
The Thousand Island Summaries 214

Motor Boat Advertisers

American Gasoline Motor Company 222
Camden Anchor-Rockland Machine Company 221
Chicago Motor Boat Show 219
Dunn, Walter E. 222
Harvard Marine and Auto Company 222
Houle, A. J. Motor Works 222
Kellogg, E. H. 222
Kowalsky, J. Engine Company 222
Lackawanna Manufacturing Company 221
Lake Shore Engine Company 221
Morss, A. C. Company 223
Putnam, R. H. 221
Rathbun-Lacy Company 217
Seitz, F. A. Company 222
Sittmann & Pitt 223
Terry, George H. Company 222
United Manufacturing Company 222
Waterman Out-Board Motor Company 221
Watres Manufacturing Company 221

"Dixie," winner of the International Trophy. Owner, E. J. Schroeder.

ard, 1.07; Xpdnc, 1.18; Mercedes, U. S. A., 1.34; Vesuvius, 1.39.

One kilometre (against the tide)—Dixie, 1.41; Standard, 1.37; Xpdnc, 1.46; Mercedes, U. S. A., 2.00; Vesuvius, 2.00.

In the long triangular contest, three responded of nine entries, the Dixie, owned by E. J. Schroeder, fitted with a 150 H. P. S. & M. Simplex motor, and the Standard, and the Skedaddle, owned by Messrs. H. N. and B. M. Baruch, which is fitted with a Craig engine of 190-horse power.

The Dixie, while the boats were in view on the up-river leg, which was with the flood tide, was apparently gaining on the Standard, but upon turning the first mark the latter was well in advance and kept increasing the distance until nearing the second mark, when the Standard was fully three-quarters of a mile the leader. Here she came to grief. In attempting to make the turn her rudder was carried away and she was helpless. The Dixie easily beat the Skedaddle, which was in trouble in the second round, but did extremely well in the last circuit. The Dixie's total time was 1h. 20m. 1s., and the Skedaddle's 1h. 44m. 29s., the Dixie winning by 24m. 35s., a very bad defeat.

Races on Thursday

Six races were run off on Thursday between thunderstorms. The "Dixie" won the speed contest for boats 39.37 and under; "Skedaddle" for those over 40 feet and "Sparrow" again distinguished herself by winning easily in the 33-foot class. The "Irene," whose hull had been repaired, was compelled to quit, as she was leaking badly. The summary is as follows:

Cruising boats, over 40 and under 60 feet; course, sixteen nautical miles:

Boats.	Finish.	Handicap.	Elapsed time.	Cor'cted time.
Sheboygan	4.34 00	....	1.09.00	1.09.00
Torino	5.15.59	19.25.00	1.40.59	1.21.34

Cruising boats over 30 and under 40 feet; course, sixteen nautical miles:

Tuna	4 53 33	....	1.23.33	1.23.33
Anona	5 06 00	....	1.36 00	....
Baby Dals	5 07 09	....	1.37 09	....

Open launches.—Course, sixteen nautical miles:

Boat.	First round.	Second round.	Third round.	Elapsed time.
Magueto	4.40.56	....	1.05.56	1.05.56
Ino	....	1.00.07	....	....

High Speed Boats, 39.37 feet and under.—Course, 30¾ nautical miles:

Dixie	0 29 06	0 26 09	0 26 54	1 22.09
Vesuvius	0 36 27	0 39 48	Did not finish.	
Irene	0 31.19			

High Speed Boats, 40 feet and over Course, 30¾ nautical miles

Skedaddle	0.34.29	0.26.43	0 26.37	1.27.49
Xpdnc	0 56.43	0.29.36	...	2.03 23
Eleo	0.40.33	0 41.34	....	2.10.34

High Speed Boats, 33 feet and under. Course, 30¾ nautical miles:

Sparrow	0 44 50	0.35.07	0 34 47	1.54 53
Yvonne	0.50 00	0.43 22	0 44 23	2.13.45
Colonia	0.50 24	0.46.52	0 46 22	2 23.38
Mercedes, U.S.A.	0.53.27	0.33.05	Did not finish.	
White Fox	1.00.43	0.50 51	Did not finish.	
Durno	1.01.03	0 47.03	Did not finish.	
Blue Peter	1.13.33	0 46.18	Did not finish.	
Josephine	0 43.09	Did not finish.		
Split the Wind	1.26.03	Did not finish.		

Friday's Races

In Friday's races "Skedaddle," "Dixie," "Sparrow" and "Sheboygan" again won in their respective classes. "Vesuvius," owned by H. L. Haggin, met with an accident and sunk. Her crew, Harry Odiorne and J. S. Ferry, were drowned, the former being thrown overboard and Ferry jumping after him in an endeavor to save him.

"Skedaddle," winner of the National Trophy for boats over 40 feet Owners, H. N. & B. M. Banich; engine, 6-cylinder, 190-H. P. Craig.

The "Morse" Spray Guards

The Pneumatic Mfg. Co., 2 and 3 South St., New York City, are manufacturers of these spray guards, the chief features of which are lightness, durability and neat appearance. They are made of 10 oz. canvas, stretched over light angle-iron ribs. These ribs are attached to the boat by means of tee head bolts that slide in guideways which are screwed to the deck. Each rib has two joints; a hinge on which it is swung inboard and an adjustable joint by which it is pitched at any desired angle. The guard is held in position by a cord attached to the under side of ribs and passing through a small screw-eye in the side of the hull a few inches above the water line, thence up between the guard and gunwale, where it is made fast to a jam-cleat. The cord is supplied with a brass wire coil spring, which allows the guard to yield to any heavy impact of water. The outer edge of the guard is curved downward, thus preventing water from shooting out beyond the canvas. Along the inner margin of the guard the canvas hangs down several inches. By means of a cord (including an elastic section kept at a tension) running through a hem in this flap, it is held tightly against the side of the boat, thus preventing the passage of water between the guard and the boat. In making a landing, or whenever desired, the guard, by releasing cord, may be swung inboard in half a second, leaving no part projecting beyond the side of the boat. All fittings permanently attached to the boat are of polished brass. All other metal parts are galvanized. The guard is easily and quickly attached or detached. When not in use it may be furled and stowed away in a small space. The prices are as follows: For boats not exceeding 21 ft. in length, $15 a pair; for boats not exceeding 25 ft., $17 a pair; for boats not exceeding 30 ft., $20 a pair; and for boats not exceeding 35 ft., $25 a pair. Prices for larger boats furnished on application to manufacturers.

The "Morse" Spray Guards, Attached to Launch.

Johnston & Hamilton, Morgan City, La., are building 2 and 4-cycle motors, and also launches. They also carry a complete line of batteries, plugs, oils, etc.

Motor Boat Coming Events

Oct. 14.—Motor Race Meet, France.
Dec. 2—Salon Motor Boat Club Race, Paris.
Dec. 22-Jan. 6—Motor Boat and Sportsman's Exhibition, Mechanics' Hall, Boston. New England Forest, Fish and Game Association, Room 218, Pierce Building, Boston, Mass.

1907.

Jan. 1-8—Motor Boat Show, Coliseum, Chicago; Cochrane & Payne, Managers, 1161 Great Northern Building, Chicago.
Feb. 19-26—Motor Boat Show, Madison Square Garden, New York.
March 2-9—Second annual Motor Boat Show, Armory, Chicago. W. C. Anderson, Manager, 19 East Huron street, Chicago.

The Hudson River Carnival

The regatta of the Motor Boat Club of America, carnival week, September 9 to 15, was run off very successfully and was a series of victories for C. J. Swain's "Sparrow," E. J. Schroeder's "Dixie," Brauch's "Skedaddle" and C. C. Riotte's "Standard." The first day was devoted to reliability trials of engines, the awards being based upon the marks received for various qualities, as follows: Reliability, 100; speed, 100; general condition after contest, 50; assignment of tanks, piping and fittings, 35; economy of fuel, 30; efficiency of reversing, 25; arrangement, design and finish of installation and cleanliness, 20; ease of control, 15; starting of engine, 25.

Boat.	Engine.	Time.	Bounds.	Points
Sparrow,	32-H. P. Packard.	6 03.08	9	336
Ralaco	18 H. P. Ralaco	5 44 12	4	248
Decoy,	30-H. P. Simplex....	6 44.17	8	234
Simplex VI,	30-H. P Simplex	6 25 00	9	227
White Fox,	40-H. P. Stamford	6 00 20	7	211
Yvonne,	50-H. P. Seltz... .	6.00 52	8	196
Torino,	40-H. P. F.I.A T....	6 17 56	5	189
Blue Peter,	30-H. P. Holmes	4 28 10	4	...
Tauntress,	20-H. P. Howard.	2 28.13	2	...

Poughkeepsie and Return

On the second day, of the 19 boats entered for the long-distance race to Poughkeepsie and return, distance 115⅝ knots, only nine started. The start was made at 9.30. "Skedaddle" equipt with the 6-cylinder Craig engine, broke her clutch soon after she started, and the "Irene," equipt with the two 4-cylinder Chadwick engines, ran aground at full speed near West Point, wrecking her hull and putting her out of the race. "Artful" finished at 3.35.33, "Sparrow" at 4.15.55, and "Simplex VI" at 5.13.59. The other boats arrived too late to be timed, and "Sparrow" was declared the winner, her time allowance giving her a good margin over "Artful." The summary is as follows:

	Engine.	Rating.	H. P
Sparrow	Packard	61.23	31.8
Artful	Speedway	77 92	132 73
Simplex VI	S & M.	72 25	30

	Handicap.	Finish	Cor time.	M P H.
Sparrow	3 37 27	4.15 55	3.08 28	19.74
Artful	1 56 14	3 35 33	4.09 19	21.93
Simplex VI	2 25.28	5 13.59	5.18.31	17 2

"The Standard," winner of the mile and kilometer championships. Average time for mile, 2 minutes, 22 seconds.

The course was 10¼ miles, to be covered continuously for 6 hours; the starting gun was fired at 11.35 A. M., and 9 of the 12 entries started. All of the starters, with one or two exceptions, were of the speed type and all were equipt with 4-cycle engines.

"Sparrow" immediately took the lead and maintained it easily thruout the race, completing nine rounds and making the highest marks on all the counts, a total of 336 out of a possible 400. Simplex VI made the next best showing for speed, but lost second place thru the loss of other marks.

Tauntress dropt out on the third round owing to stoppage of water circulation, and Blue Peter ran out of fuel and dropt out on the fifth round. All the others kept running until the signal to stop was fired. The summary for the trials is as follows:

Wednesday's Events

Price McKinney's 300 H. P. Standard won the mile and kilometer championships, her average time for the mile being 2.22—29.17 miles per hour. Dixie was second, with an average of 2.39½ and a rate of 25.90 miles an hour. Xpdnc finished third, her average time being 2.42 and 25.58 miles an hour. Mercedes and Vesuvius were fourth and fifth, respectively.

The kilometre race was timed during the mile race and the boats finished in the same order. The times of the various starters in each run was as follows:

One mile (with the tide)—Dixie, E. C. Schroeder, 2.35; Standard, Price McKinney, 2.10; Xpdnc, Jacob Siegel, 2.30. Mercedes, U. S. A., H. L. Boden, 2.57; Vesuvius, L. L. Haggin, 3.18.

One mile (against the tide)—Dixie, 2.44; Standard, 2.34; Xpdnc, 2.54; Mercedes, U. S. A., 3.20; Vesuvius, 3.24.

One kilometre (with the tide)—Dixie, 1.23; Stand-

The summary for the day is as follows:

Cruising Boats, 40 to 60 feet.—Course, sixteen miles:

Boat and Owner.	Finish. H.M.S.	Elapsed time. H.M.S.	Corrected time H.M.S.
Sheboygan—J. L. Reiss....	4.17.36	1.07.36	1 07 36
Torino—E. R. Hollander..	5 08.34	1.58 34	1 39 09

Cruising Boats, under 40 feet —Course, 16 miles

Tuna—H. M Crane.....	4.45.38	1.30.38	1 30.38
Anona G. G Scott	4 56.35	1.41 35	.....
Tulip Duly—P. Daly.....	4 57 09	1.42.09	1.42.05

High Speed Boats, 39 37 feet and under; start 3.35.—Course, 30% miles:

Dixie—E. J. Schroeder.....	4.54.06	1.19.06	.....
Den—J. H. Hoadley ..	5.23.07	1.48.02	.....
Vesuvius—L. L. Haggin.	Did not finish, sunk.		

High Speed Boats, 40 feet and over.—Course, 30% miles:

Skedaddle—			
H. N. & B. M. Baruch..	4.52.10	1.22.10	1.22.10
Xpdne—Jacob Siegel.....	4.59.39	1.29.39	1.28.24
Elco—H. R. Sutphen.....	5.37.45	2.07.45	1.48.44

High Speed Boats, 33 feet and under; start 3.25.—Course, 30% miles:

Yvonne—J. R. Johnson....	5.28.45	2.03.05	1.50.47
Blue Peter—C. D. Holmes.	5.43.05	2.18.05	1.48.56
La Petite II—A. B. Luders,		Did not finish.	
Durno—J. H. Durno.....	5.47.05	2.22.05	1.51.57
White Fox—W. Ferguson.		Not timed.	
Colonia—F. G. Bourne.....	5.25.28	2.00.28	1.43.51
Sparrow—C. J. Swain.....	5 09.46	1.44 46	1.15.15
Josephine—G H Lester...	5.19.24	1.54.24	1.48 00

60 feet. She is fitted with a 56-horse power motor.

The summary for the day follows:

Cruising Boats, 40 to 60 feet; start, 3.25.—Course, 16 miles:

Boat and Owner.	Finish. time. H.M.S.	Elapsed time. H.M.S.	Corrected time. H.M.S.
Sheboygan—J. L. Reiss...	4.42.31	1.17.31	1.17.31

Cruising Boats, under 40 feet; start, 3.30.—Course, 16 miles:

Tuna—H. M. Crane.....	4.59.06	1.29.06	1.29.06

High Speed Boats, under 40 feet; start, 3.50.—Course, 30% miles:

Dixie—E. J. Schroeder....	5.09.57	1.19.57	.....
Den—J. H. Hoadley....	5.42.09	1.58.09	.....

High Speed Boats, 40 feet and over, start, 3.45.—Course, 30% miles:

Skedaddle—			
H. N. & B. M. Baruch..	5.21.54	1.36.54	1.36.54
Elco, H. R. Sutphen.....	5.41.30	1.56.30	1.37.29

High Speed Boats, 33 feet and under; start, 3.40.—Course, 30% miles.

Sparrow—C. J Swain.....	5.16.48	1.36.48	1.07.17
Josephine—G. H. Lester...	5.21 02	1.41.02	1.34.38
Colonia—F. G. Bourne....	5 39 07	1.59.53	1.43 16
White Fox—			
W. Ferguson, Jr....	6.00.40	2.20.40	2.07 56
Durno, J. H. Durno.....	5 56.26	2.16.36	1.46.18
Yvonne, J. R. Johnson...	Did not finish.		

"Sparrow," winner of the reliability trials and the Interstate Trophy. Owner, C. J. Swain; builders, E. H. Godshalk & Co.; engine, 32-H. P. Packard.

The Last Day

The consistently good work of "Sparrow," "Dixie" and "Skedaddle" decreased the number of starters in Saturday's races, as the owners of other boats gave up hope of beating them. The National trophy, for all boats 40 feet and over, winning the greatest number of points in three days' racing, was awarded to the "Skedaddle," owned by Messrs. H. N. and B. M. Baruch, of the Atlantic Yacht Club. "Skedaddle" is fitted with a 6-cylinder motor, rated at 190 85-horse power. To the "Sparrow" was given the Interstate trophy for all boats 33 feet and under. This little racing craft has made a clean record for herself during the past week and for the men who so skillfully managed her. The "Sparrow" won the reliability test and finished first in the long-distance race to Poughkeepsie and return, about 140 miles.

The International trophy, world's championship, for all boats 12 meters, goes to the "Dixie." The "Dixie" is owned by E. J. Schroeder, of the Motor Boat Club of America, and has a motor rated at 132-horse power. The "Skedaddle" won the Cabin Launch trophy, for all boats between 40 and

The Thousand Island Summaries

The summaries for the races held at the Thousand Islands, August 21 to 23, which were received too late for our September issue, are as follows:

	Start.	First Round.	Second Round.	Elap'd.	Rate.
Sparrow (winner)	2 39 26	3 20 30	4 01 40	1 22 14	21 95
Chip II..	2 30 00	3 18 13	4 02 52	1 32 52	19 46
Jewel	2.56.08	3 40.47	4.25.15	1.29.07	20.20
Dixie	3.20.31	3 18.07	4.25 24	1.04.53	27.90
Guess Again.....	2.54.35	3.42 29	4.30 42	1.36.07	18.75
Vingt Trois.....	2.58.51	3 42.23	4.26 28	1.27.37	29.57
Tornado	3.00.31	3.44.11	Did not finish		
Vingt-et-un	3 10 58	3 49 59	4 28 22	1.17.24	22.66
So Long II..	3 10 15	3 55 49	4 31.51	1 12.36	24.82
Triton	3.21.21	Disqualified.			

SECOND DAY.

	First Start.	Round.	Finish	Elap'd.	Rate.
Chip II. ...	2.30.00	3.18.28	3.57 01	1 27.01	20.68
Sparrow	2 39 26	3 20 09	4 00 47	1 21 21	22.08
Guess Again ...	2 54 35	3 43 02	4 31 36	1 37 01	18.55
Jewel	2.56 08	3 40 43	4 25.21	1 29 13	20 20
Vingt Trois ...	2.58 51	3 43 25	4 27 45	1 20 54	20.70
Vingt-et-un	3 10 58	3 50 12	4 28 51	1 17 53	23.22
So Long II. .	3 10.14	3 54 30	4 29 54	1 19 40	25.57
Dixie	3 20 37	3 53 21	4 25 26	1 04 49	27.94

THIRD DAY

	First Start	Round	Finish	Elapsed.
Chip II	2 30 00	3 16 17	4 05 40	1.35.40
Sparrow	2 39 26	3 39 58	4 29 00	1 49 34
Guess Again. ..	2 54 35	4 12 43	5 05 43	2 15 08
Jewel	2 56 08	3 51 47	4.43.12	1.46.54

The H. M. Co.'s 30-Foot Launch

The Horton Mfg. Co., Painesville, Ohio, manufacturers of brick-making machinery, have added a boat department to their plant and are now manufacturing motor-boats, launches, canoes, etc. The accompanying cut shows one of their 30-foot

Horton Mfg. Co.'s 30-foot Launch.

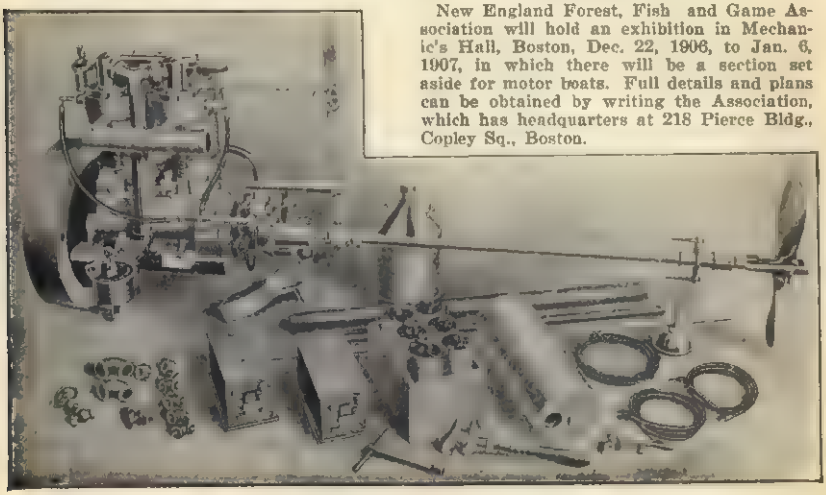
family launches, 30 ft. length by 6 ft. 8 in. beam, equipped with a 14 H. P. double cylinder, two-cycle engine. This model has proved to be a splendid sea boat, and has given a speed of 12 miles per hour. Besides the 30 ft., this concern also builds launches of sixteen, eighteen, twenty-one and twenty-five feet lengths, as well as a standard line of row boats and canoes.

Batavia 6 H. P. Marine Motor

The Harrington-Wiard Co., Batavia, N. Y., are now making a 2-cylinder, 6 H. P., 4-cycle gasoline marine motor, in addition to the single cylinder motor described in these columns some time ago. The bore of this new motor is 3¾ inches. The valves are of nickel steel. The drop-forged crank-shaft has three bearings, each 1⅛ inches long, the boxes being of bronze. The fly-wheel has tapered hole to admit the end of the crank-shaft. It weighs 80 lbs., measures 15 inches diameter and has a disappearing handle for starting the motor. The base is 15 inches square. Either a Kingston or Buffalo carburetor is furnished and either Kingston or Splitdorf spark coil. The ignition outfit also includes "Columbia Ignitor" dry cells, "Packard" high and low-tension cables, double-acting switch, "Soot Proof" spark plug, soldered terminals and removable spark plug hoods. The propeller wheel is 16 inches diameter and is connected to the end of a ¾-inch steel shaft. If a bronze shaft is wanted the price is $3 extra.

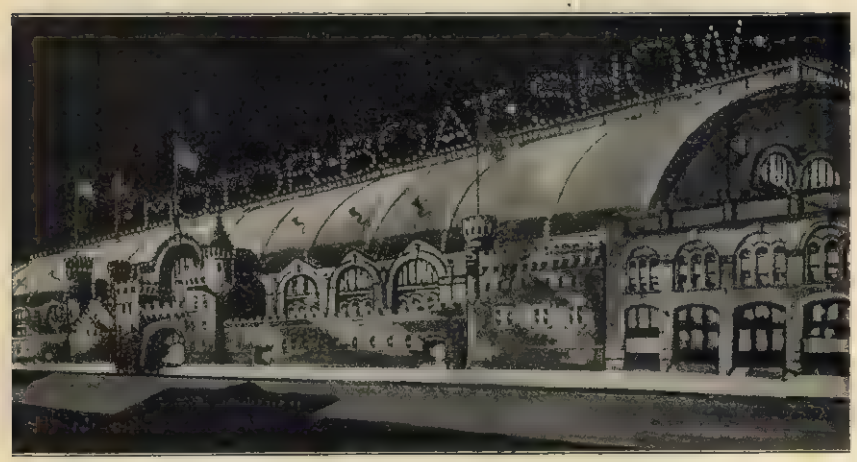
The price of the 6 H. P., 2-cylinder motor is $225, which includes a 16-inch propeller complete, 1 carburetor, brass fittings, 1 pump, brass fittings, 1 sight-feed oiler, 2 single or 1 double spark coil, 1 muffler, 2 lengths primary cable, 2 lengths secondary cable, 10 feet ¼-inch brass pipe and fittings, 8 feet 1¼-inch iron pipe and fittings, 2 feet ½-inch iron pipe and fieetings, 4 feet ⅜-inch iron pipe and fittings, 1¼-inch Dart Union, 1⅜-inch Dart Union, 1 combination wrench, 1 socket wrench, 1 switch, 1 gallon oil in can and 1 oil can. The weight of motor alone is 270 lbs., and the weight, including parts, crated, is 320 lbs. The weight of box of parts, separately, is 40 lbs.

New England Forest, Fish and Game Association will hold an exhibition in Mechanic's Hall, Boston, Dec. 22, 1906, to Jan. 6, 1907, in which there will be a section set aside for motor boats. Full details and plans can be obtained by writing the Association, which has headquarters at 218 Pierce Bldg., Copley Sq., Boston.



Batavia 6 H. P. Marine Motor and Complete Outfit.

MOTOR BOAT
AND
ACCESSORY MANUFACTURERS
Exhibit your product
at the
1907 SHOW
OF
Motor Boats and Accessories
AT THE



THE COLISEUM, CHICAGO

Management COCHRANE & PAYNE

JANUARY 1st to 8th 1907

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For space and other particulars
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COCHRANE & PAYNE, Mgrs.
CHICAGO MOTOR BOAT SHOW

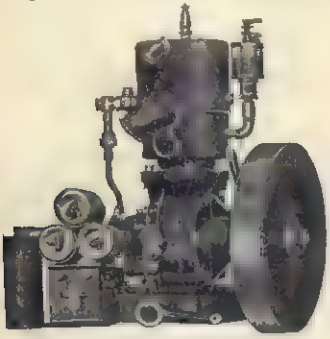
NEW YORK OFFICE
Suite 1734-35
Park Row Bldg.
Tel. 5939 Cortlandt

Address all communications to the Chicago Office

The "Monarch" Marine Engine

C. W. Parmelee & Son, Marion, Mich., are manufacturers of this engine, which is of the 3 H. P. 2-cycle type. The bore is 3 9-16 inches and the stroke 3 inches. At 1000 revolutions per minute the engine develops full 3 H. P. It requires no cranking, simply rocking the balance wheel is sufficient to charge the cylinder, when a slight pull backward on the wheel will start the engine. Jump spark ignition outfit is used, consisting of vibrator coil, spark plug and two sets of four batteries each, making them changeable from one set to the other, allowing one set to recuperate. The engine is also furnished with a magneto at a slight increase in price. The cylinder and cylinder head are cast in one piece, having no packed joints to leak and cause trouble.

The piston is fitted with four piston rings,



The "Monarch" Marine Engine.

three at the upper and one at the lower end, turned eccentric and finished under compression to a perfect fit. The connecting rod is of bronze, the upper or piston end swings on a tool steel roller bearing, requiring no oil. The crank shaft, runs in two babbited boxes each three inches long and fitted with grease cups. Oiling is effected by a sight feed oil cup of good size. The engine can also be run with kerosene oil. The range of efficient speed is from 300 to 2000 revolutions per minute. The price of engine complete is $75, f. o. b. Marion, which includes propeller wheel, shaft, carburetor, spark coil and spark plug, two sets of batteries, and muffler, everything ready to install in boat except gasoline tank. Price of engine without parts, $50. Castings can also be had of this engine, boxed for shipment, f. o. b. Marion, Mich., at $15

A New Delaware River Plant

The Yacht, Gas Engine & Launch Co., of Philadelphia, has secured a five-year lease on the property at Essington, Pa., formerly occupied by Mr. John S. Sheppard, and will erect a building 50x120 feet for a boat shop. In addition to the repair work which they will do, they report that they will build over $75,000 worth of new yachts for 1907, sufficient contracts being on hand to keep them going full capacity for a year. Their boat shop will be equipped with compressed air tools. All yachting supplies will be carried in stock, so that tourists can make it their headquarters for mail, etc., in passing up and down the river. A reading room for captains will be open at all times for their comfort and enjoyment; in short, it will be a plant such as the Delaware River has never had before. They have 321 feet of water front, 18 feet of water at low tide and over six acres of ground, and a fully equipped plant, marine railway, etc. The officers of the company are: President, H. E. Dantzebecher, naval architect and marine engineer; vice president, Richard R. Miller; treasurer, F. A. Von Boyneburgh; secretary, Preston B. Lee.

One of their contracts is a light draught racing schooner, 50x12 feet, which will be calked with the company's patent copper calking, the invention of Mr. Dantzebecher. Work on this and several other boats will be started at once.

"Commodore" Spray Hoods

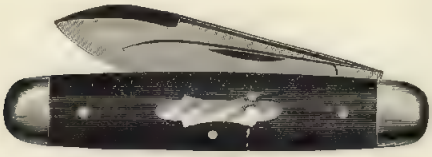
Pneumatic Marine Goods Mfg. Co., 2 and 3 South street, New York City, handle a line of spray hoods under the trade name "Commodore" which are easily raised or lowered and can be quickly brought into use in an emergency. The "Commodore" Spray Hood is at its best when fitted to both ends of the cockpit of an open launch, forming a complete night cover. The night cover may be stowed away in the lockers, just as the single spray hood is stowed, or it may be folded fore and aft on the decks and neatly furled. To adapt the "Commodore" Spray Hood for use as a full night cover, it is only necessary to select two of the standard hoods, the total length of which will cover the entire cockpit, leaving an overhang at each end of from 4 to 8 inches, and a gap amidships of from 18 to 24 inches. This gap between the two hoods is closed by a separate flap, attached by snap hooks to rings sewed to each hood. This flap provides an easy means of entering the boat from either side, without disturbing the hoods. The hoods are precisely the same as the ordinary "Commodore" Spray Hood for use when running, and either or both may be used in this way. They may be removed and stowed in the lockers in a few minutes, if desired, or they may be erected while running as easily. Great pains have been taken to make all fastenings simple, secure and convenient.

A victory for the Pirate was the result of the three days' races at Frontenac on August 27, 28, 29, which took the free-for- all after a hard fight, with So Long II, the boats only being seconds apart in the first half of the 14-mile course. The Pirate covered the course in 33 minutes and 8 seconds. She also won the cup offered for the best time of the meet.

RAZOR STEEL POCKET KNIVES.

Etched. Fully Warranted.

Full Size Cuts.

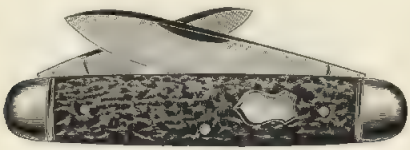


No 2434.

No. **2413.**	3½ Inch, 2 Blades, Cocoa Handle, Iron Lined. . ...Per Dozen		$ 8 00
No. **2420.**	3¼ Inch, 2 Blades, Cocoa Handle, Brass Lined.....	"	8 50
No. **2423.**	3⅝ Inch, 2 Blades, Cocoa Handle, Iron Lined..... . ..	"	9 50
No. **2434.**	4 Inch, 2 Blades, Cocoa Handle, Brass Lined.....	"	11 50
No. **2620.**	3¼ Inch, 2 Blades, Stag Handle, Brass Lined	"	9 50
No. **2634.**	4 Inch, 2 Blades, Crocus Polished, Stag Handle, Brass Lined..	"	14 00

No 3822.

No. **2622.**	3½ Inch, 2 Blades, Crocus Polished, Stag Handle, Brass Lined..Per Dozen		$11 50
No. **2626.**	3⅞ Inch, 2 Blades, Crocus Polished, Stag Handle, Brass Lined	"	13 00
No. **2422.**	3½ Inch, 2 Blades, Crocus Polished, Cocoa Handle, Brass Lined	"	11 00
No. **2426.**	3⅞ Inch, 2 Blades, Crocus Polished, Cocoa Handle, Brass Lined	"	12 00
No. **2722.**	3½ Inch, 2 Blades, White Bone Handle, Iron Lined.....	"	11 50
No. **2726.**	3⅞ Inch, 2 Blades, White Bone Handle, Iron Lined	"	13 00



No 2621.

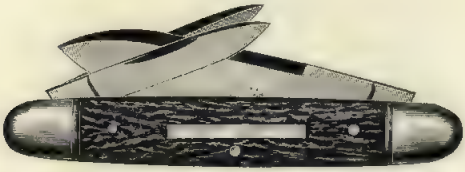
No **2621.**	3⅜ Inch, 2 Blades, Crocus Polished, Stag Handle, Brass Lined..Per Dozen		$10 50
No. **2421.**	3⅜ Inch, 2 Blades, Crocus Polished, Cocoa Handle, Brass Lined	"	10 00

Half Dozen in a Box.

RAZOR STEEL POCKET KNIVES.

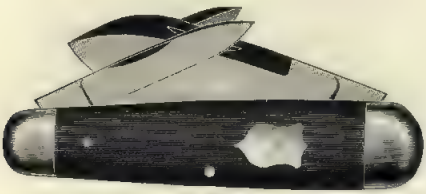
Etched. Fully Warranted.

Full Size Cuts.



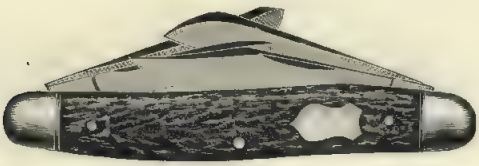
No. 3658

No. **3658.** 3¾ Inch, 3 Blades, Crocus Polished, Stag Handle, Brass Lined. Per Doz $18 00



No. 3569

No. **3569.** 3½ Inch, 3 Blades, Crocus Polished, Ebony Handle, Brass Lined Per Doz $18 50



No. 4692

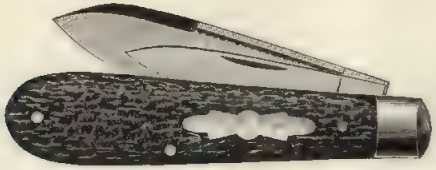
No. **4692.** 3⅞ Inch, 4 Blades, Crocus Polished, Stag Handle Brass Lined. . Per Doz $22 00

Half Dozen in a Box.

RAZOR STEEL POCKET KNIVES.

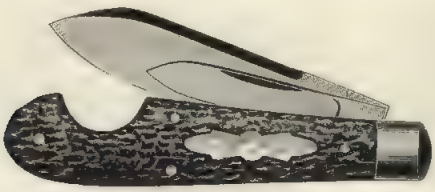
Etched, Fully Warranted.

Full Size Cuts



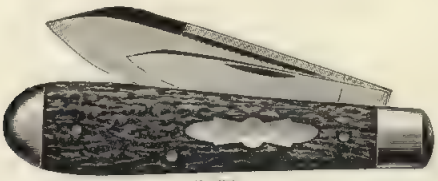
No. 2610

No. **2610.**	3⅝ Inch, 2 Blades, Spear Point, Stag Handle, Brass Lined..	.Per Dozen	$9 50
No. **2606.**	3⅝ Inch, 2 Blades, Spear Point, Stag Handle, Iron Lined....	"	8 00
No **2608.**	3½ Inch, 2 Blades, Clip Point, Stag Handle, Iron Lined.....	"	8 00
No **2410.**	3⅝ Inch, 2 Blades, Spear Point, Cocoa Handle, Brass Lined..	"	8 50
No. **2406.**	3½ Inch, 2 Blades, Spear Point, Cocoa Handle, Iron Lined...	"	7 00
No **2408.**	3½ Inch, 2 Blades, Clip Point, Cocoa Handle, Iron Lined ...	"	7 00
No. **2706.**	3½ Inch, 2 Blades, Spear Point, White Bone Handle, Iron Lined	"	8 00
No. **2708.**	3½ Inch, 2 Blades, Clip Point, White Bone Handle, Iron Lined	"	8 00



No. 2612. Easy Opener

No. **2612.**	3⅝ Inch, 2 Blades, Stag Handle, Iron Lined ....Per Dozen		$ 8 50
No. **2412.**	3⅝ Inch, 2 Blades, Cocoa Handle, Iron Lined.	"	8 00



No. 2628.

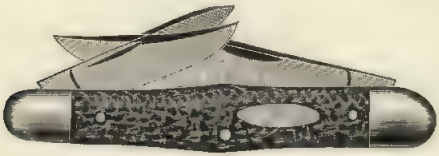
No. **2628.**	3⅝ Inch, 2 Blades, Crocus Polished, Stag Handle, Brass Lined. Per Dozen		$10 00
No. **2428.**	3⅝ Inch, 2Blades, Crocus Polished, Cocoa Handle, Brass Lined.	"	9 50

Half Dozen in a Box

RAZOR STEEL POCKET KNIVES.

Etched. Fully Warranted.

Full Size Cuts

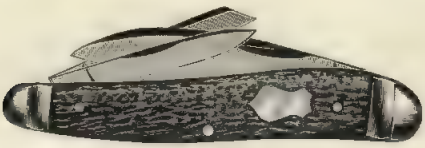


No. 3667

No. **3667.** 3⅝ Inch, 3 Blades, Crocus Polished, Stag Handle, Brass Lined..Per Dozen $18 00

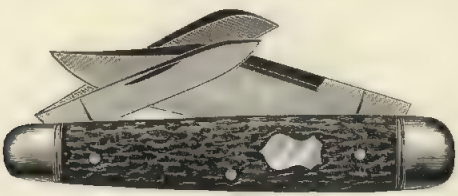
No. 3976

No. **3976.** 3⅛ Inch, 3 Blades, Crocus Polished, Pearl Handle, Aluminum Cap and Bolster, Brass Lined.....Per Dozen $24 50



No. 3953

No. **3953.** 3⅛ Inch, 3 Blades, Crocus Polished, Stag Handle, Brass Lined..Per Dozen $17 00
No **3953.** 3½ Inch, 3 Blades Crocus Polished, Pearl Handle Brass Lined " 25 00



No. 3668

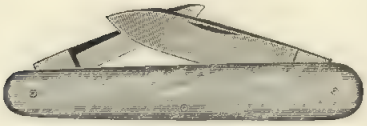
No. **3668.** 3¾ Inch, 3 Blades, Crocus Polished, Stag Handle, Brass Lined..Per Dozen $17 00
No. **3468.** 3¾ Inch, 3 Blades, Crocus Polished, Cocoa Handle, Brass Lined " 16 50

Half Dozen in a Box.

RAZOR STEEL POCKET KNIVES.

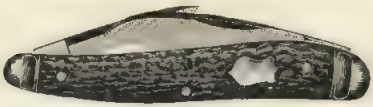
Etched. Fully Warranted.

Full Size Cuts



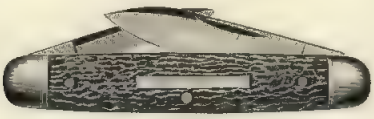
No. 298

No. **298.** 3 Inch, 2 Blades, Crocus Polished, Pearl Handle, Brass Lined Per Dozen $18 00
No. **267.** 3 Inch, 2 Blades, Crocus Polished, Stag Handle, Brass Lined... " 8 50



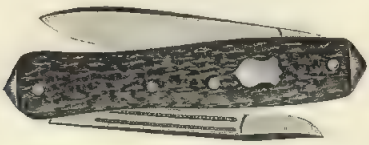
No. 266.

No. **266.** 3 Inch, 2 Blades, Crocus Polished, Stag Handle, Brass Lined ..Per Dozen $11 00
No. **2653.** 3½ Inch, 2 Blades, Crocus Polished, Stag Handle, Brass Lined " 14 00



No. 260

No. **260.** 3 Inch, 2 Blades, Crocus Polished, Stag Handle, Brass Lined. Per Dozen $9 00



No. 265.

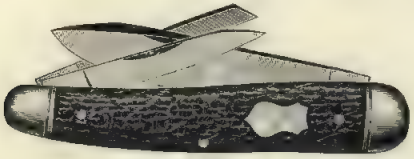
No. **265.** 3 Inch, 2 Blades, Crocus Polished, Stag Handle, German Silver Lined.....Per Dozen $16 00

Half Dozen in a Box

RAZOR STEEL POCKET KNIVES.

Etched. Fully Warranted.

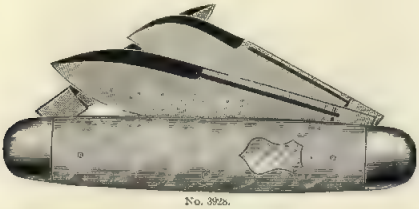
Full Size Cuts.



No. 3665.

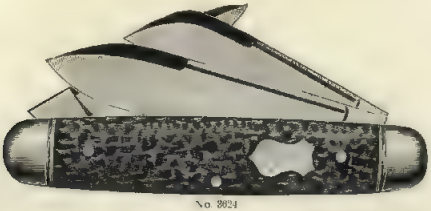
No. **3665.** 3¾ Inch, 3 Blades, Crocus Polished, Stag Handle, Brass Lined Per Dozen $18 50

No. **3865.** 3¾ Inch, 3 Blades, Crocus Polished, Gray Buffalo Handle, Brass Lined . . . . . Per Dozen 18 50



No. 392s.

No. **3928.** 3⅝ Inch, 3 Blades, Crocus Polished, Pearl Handle, Brass Lined. Per Dozen $30 00



No. 3824

No. **3624.** 3⅝ Inch, 3 Blades, Crocus Polished, Stag Handle, Brass Lined. Per Dozen $17 00

No. **3724.** 3⅝ Inch, 3 Blades, Crocus Polished, White Bone Handle, Brass Lined . . . . . Per Dozen 16 00

No. **3824.** 3⅝ Inch, 3 Blades, Crocus Polished, Gray Buffalo Handle, Brass Lined . . . . . Per Dozen 17 00

Half Dozen in a Box.

RAZOR STEEL POCKET KNIVES.

Etched. Fully Warranted.

Full Size Cuts

No. 2955.

No. **2955.** 2⅝ Inch, 2 Blades, Crocus Polished, Pearl Handle, Brass Lined Per Dozen $15 00

No 2656

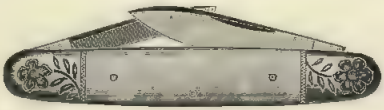
No. **2656.** 2¾ Inch, 2 Blades, Crocus Polished, Stag Handle, Brass Lined PerDozen $11 00

No 292

No. **292.** 2⅝ Inch, 2 Blades, Crocus Polished, Pearl Handle, Brass Lined Per Dozen $14 00

No. 294.

No. **294.** 2¾ Inch, 2 Blades, Crocus Polished, Pearl Handle, Brass Lined Per Dozen $12 00
No. **394.** 2¾ Inch, 3 Blades, Crocus Polished, Pearl Handle, Brass Lined " 16 00



No 2972

No. **2972.** 3⅛ Inch, 2 Blades, Crocus Polished, Pearl Handle, Aluminum Bolsters, German Silver Lined . Per Dozen $17 00
No. **2971.** 2¾ Inch, 2 Blades Crocus Polished, Pearl Handle, Aluminum Bolsters, German Silver Lined . . . Per Dozen 15 00
No. **2973.** 3⅛ Inch 2 Blades, Crocus Polished, Pearl Handle, Aluminum Bolsters, German Silver Lined.....Per Dozen 20 00

Half Dozen in a Box.

RAZOR STEEL POCKET KNIVES.

Etched. Fully Warranted.

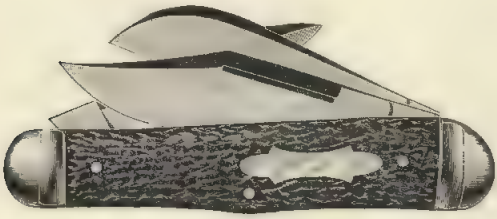
Full Size Cuts

No. 3470

No. **3470.** 4¼ Inch, 3 Blades, Cocoa Handle, Brass Lined.... .. ..Per Dozen $19 00

No. 3646

No. **3646.** 4¼ Inch, 3 Blades, Crocus Polished, Stag Handle, Brass Lined. Per Dozen $19 50



No. 3648.

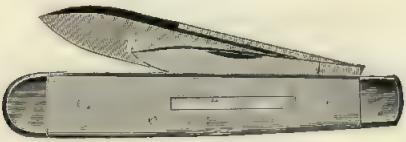
No **3648.** 4¼ Inch, 3 Blades, Crocus Polished, Stag Handle Brass Lined. . Per Dozen $20 00

Half Dozen in a Box.

RAZOR STEEL POCKET KNIVES.

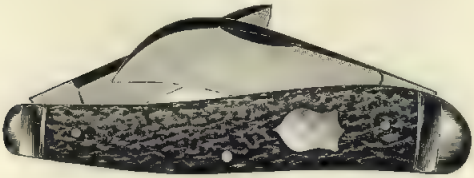
Etched. Fully Warranted.

Full Size Cuts.



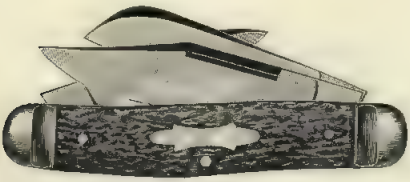
No. 2735

No. **2735.** 3⅛ Inch, 2 Blades, Crocus Polished, Ivory Handle, Brass Lined..Per Dozen $13 00
No. **2635.** 3⅛ Inch, 2 Blades, Crocus Polished, Stag Handle, Brass Lined " 11 00



No. 2644.

No. **2644.** 4 Inch, 2 Blades, Budding and Pruning, Crocus Polished, Stag Handle, Iron Lined ..... Per Dozen $16 00

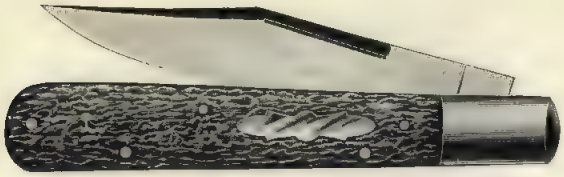


No. 3822

No. **3622.** 3½ Inch, 3 Blades, Crocus Polished, Stag Handle, Brass Lined Per Doz $15 00
No. **3822.** 3⅛ Inch, 3 Blades, Crocus Polished, Gray Buffalo Handle, Brass Lined..... .Per Dozen 15 00

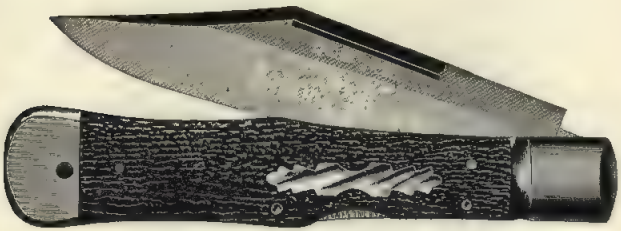
RAZOR STEEL POCKET KNIVES.

Etched. Fully Warranted.



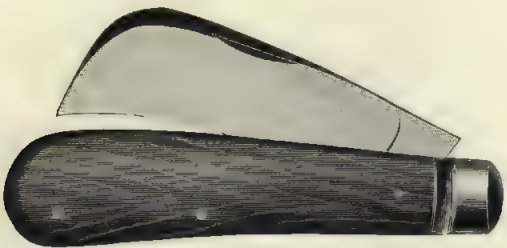
No. 166. Full Size Cut.

No. **166.** 4½ Inch, 1 Blade, Crocus Polished, Stag Handle, Brass Lined Per Dozen $16 00



No. 168.

No. **168.** 5½ Inch, 1 Blade, Crocus Polished, Stag Handle, Brass Lined Per Dozen $25 00
No. **140.** 5½ Inch, 1 Blade, Cocoa Handle, Iron Lined, Without Cap.... " 14 00



No. 145. Full Size Cut

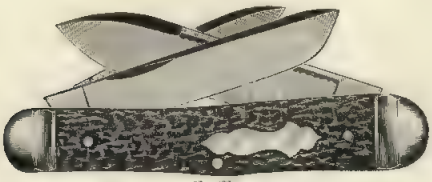
No. **145.** 4 Inch, Pruning, 1 Blade, Cocoa Handle, Iron Lined.....Per Dozen $8 50

Half Dozen in a Box

RAZOR STEEL POCKET KNIVES.

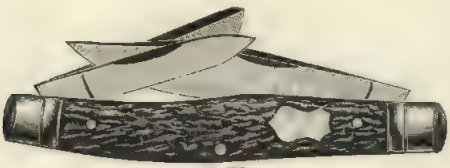
Etched. Fully Warranted.

Full Size Cuts



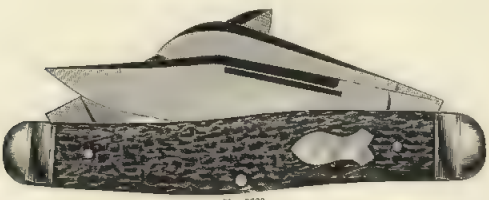
No. 3625.

No. **3625.** 3½ Inch, 3 Blades, Crocus Polished, Stag Handle, Brass Lined..Per Dozen $18 00



No. 3657.

No. **3657.** 3⅝ Inch, 3 Blades, Crocus Polished, Stag Handle, Brass Lined Per Doz $17 00
No. **3957.** 3⅝ Inch, 3 Blades, Crocus Polished, Pearl Handle, Brass Lined " 24 00



No. 3626.

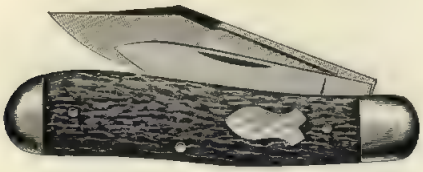
No. **3626.** 3⅞ Inch, 3 Blades, Crocus Polished, Stag Handle, Brass Lined. Per Doz $18 00
No. **3826.** 3⅞ Inch, 3 Blades, Crocus Polished, Gray Buffalo Handle, Brass Lined.....Per Dozen 18 00
No. **3926.** 3⅞ Inch, 3 Blades, Crocus Polished, Pearl Handle, Brass Lined " 36 00

Half Dozen in a Box.

RAZOR STEEL POCKET KNIVES.

Etched. Fully Warranted

Full Size Cuts.



No. 2632

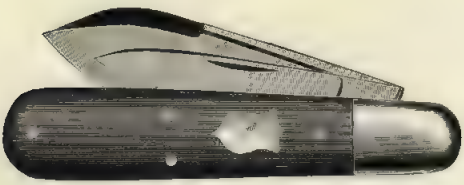
No. **2632.** 3½ Inch, 2 Blades, Clip Point, Crocus Polished, Stag Handle, Brass Lined ... .Per Dozen $11 50

No. **2631.** 3½ Inch, 2 Blades, Spear Point, Crocus Polished, Stag Handle, Brass Lined ..Per Dozen 11 50

No. **2432.** 3½ Inch, 2 Blades, Clip Point, Crocus Polished, Cocoa Handle, Brass Lined. ... Per Dozen 10 70

No. **2431.** 3½ Inch, 2 Blades, Spear Point, Crocus Polished, Cocoa Handle, Brass Lined Per Dozen 10 70

No. **2932.** 3 Inch, 2 Blades, Spear Point, Crocus Polished, Pearl Handle, Brass Lined Per Dozen 20 00



No. 2429.

No. **2429.** 3¾ Inch, 2Blades, Crocus Polished, Cocoa Handle, Brass Lined.Per Dozen $12 00

No. **2419.** 3¾ Inch, 2 Blades, Crocus Polished, Cocoa Handle, Iron Lined " 10 00

No. **2619.** 3¾ Inch, 2 Blades, Crocus Polished, Stag Handle, Iron Lined " 11 00

No. **2719.** 3¾ Inch, 2 Blades, Crocus Polished, White Bone Handle, Iron Lined.....Per Dozen 12 00

Half Dozen in a Box.

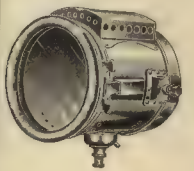
OIL 20th Century GAS

BICYCLE AND MOTOR CYCLE.

Separate Generator
Motor Cycle Lamps

Driving, Boat and Gas Hand Lanterns, etc.

AUTOMOBILE
HEAD LIGHTS, SIDE LIGHTS, REAR LIGHTS AND GENERATORS



A No. 1
for quality and finish.

Variety of Styles.

GENERATORS
that generate properly.

HOUSE AND TOWN ACETYLENE GENERATORS

A safe, simple, easy and cheap system of illumination.

Send for catalogues

20th Century Mfg Co.

19 WARREN ST. (near Broadway), NEW YORK

CABINET KEY BLANKS.

Malleable Iron

4615 $0 55

4614 Unpolished $0 50

4606. $0 25

4605 Unpolished $0 25

4601 $0 25

4602 ....$0 20

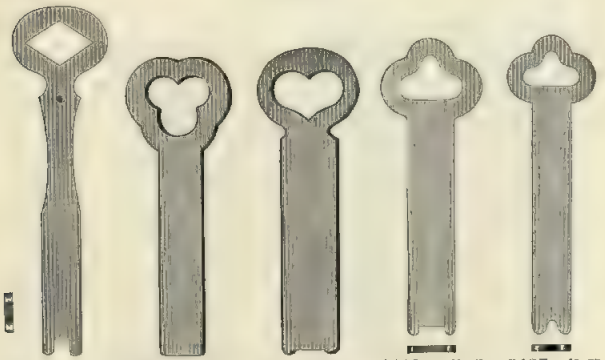
4603....$0 15

Above Prices Per Dozen.

Half Gross in a Box.

DOOR KEY BLANKS.

Flat Steel.

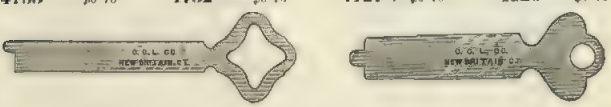


8476....$0 75 **8493**....$1 00 **8461**.....$1 00 **8489** .. $0 75 **8487** ..$0 75

CABINET KEY BLANKS.

Flat Steel.

4753 $0 75 **4752** $0 75 **4127** . $0 75 **4126** $0 75



4145... ..$0 75 **4151**..... $0 75

Above Prices Per Dozen.

Half Gross in a Box.

DOOR KEY BLANKS.

Tinned, Malleable Iron.

7793 .. $0 40

7793½ .. $0 40

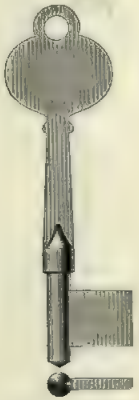
7795.... $0 40

7796 $0 40

Wrought Steel.

195.....$3 00

197 . $3 00



165½ ... $3 00

All Keys Listed at 40¢ are Tinned Malleable; at $3.00, Polished Steel. Above Prices Per Dozen.

Quarter Gross in a Box.

CABINET KEY BLANKS.

Flat Steel.

4134.. ...$0 75

4131. . . .$0 75

4121...$0 75

4144...$0 75

4120.....$0 75

4141....$0 75

4140...$0 75

4112...$0 75

4107....$0 75

4153 .$0 75

4116..$0 75

4103..$0 75

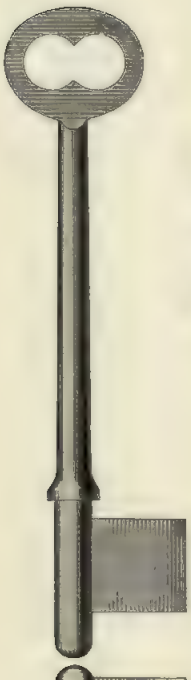
4102..$0 75

Above Prices Per Dozen.

Half Gross in a Box.

DOOR KEY BLANKS.

Tinned, Malleable Iron.



7515 ....$1 50

7762 $0 40

7804 $0 40

7742 $0 40

7707.....$0 50

7736... $0 50

7772 $0 40

Above Prices Per Dozen.

Quarter Gross in a Box.

DOOR KEY BLANKS.

Tinned, Malleable Iron.

7926.... $0 40

7797.... $0 40

7740 . . . $0 45

7771 $0 40

7704 .....$0 70
150 Brass. 1 50

7724.....$0 40

7877....$0 40

7732 .....$0 50

Above Prices Per Dozen.

Quarter Gross in a Box.

CABINET KEY BLANKS.

Malleable Iron. Double Bit.

4494 . $0 75

4493..... $0 75

4491....$0 40

5572..$1 00

Struck-Up, Solid Steel, Double Bit.

4200..$1 00

4204....$1 00

4202....$1 00

4216..$1 00

4217..$1 00

Above Prices Per Dozen.

Six Dozen in a Box.

CABINET KEY BLANKS.

Malleable Iron.

4791 $0 30

4670 $0 15

4780..$0 20

4778. $0 18

4777. $0 15

4533 $0 35

4790 ..$0 25

4781....$0 25

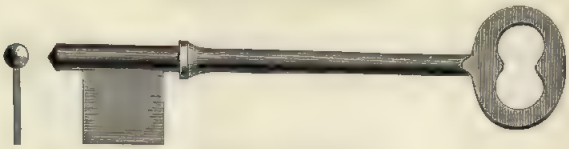
4651..$0 30

4776..$0 15

Above Prices Per Dozen.

Half Gross in a Box.

DOOR KEY BLANKS.



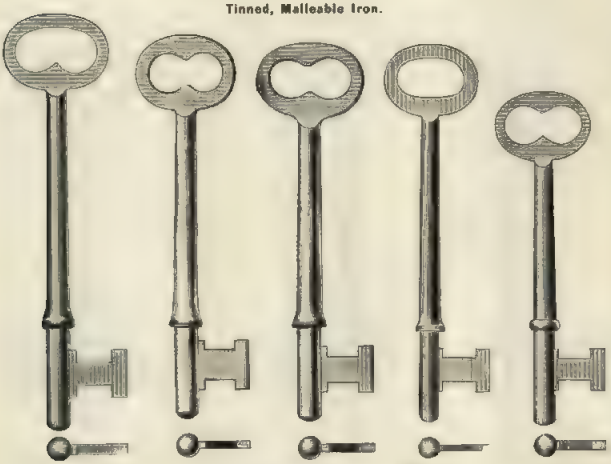
Tinned, Malleable Iron.

7501. . $0 60

Flat Steel.

6862. . . $1 25

Tinned, Malleable Iron.

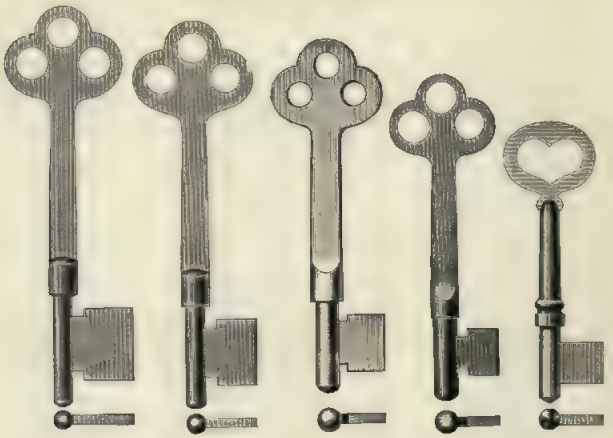


7790 .$0 40 7791....$0 40 7792.. .$0 40 7792½ .$0 40 7792½A $0 40

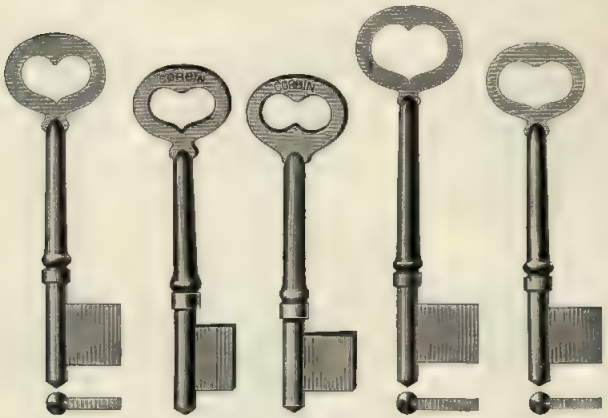
Above Prices Per Dozen.

Quarter Gross in a Box.

DOOR KEY BLANKS.



7780. . .$0 40 **7782** $0 40 **7784**. . .$0 40 **7788**. . .$0 40 **0311**. . .$1 50

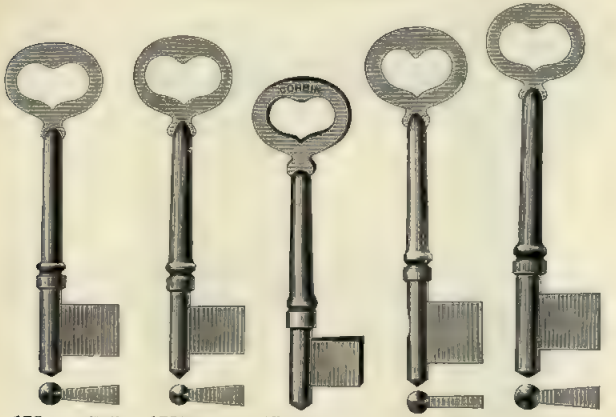


7905. . . .$0 40 **313**. . . . . $1 50 **80¾**. . . . . $1 50 **7631**. . $0 40 **7903** $0 40

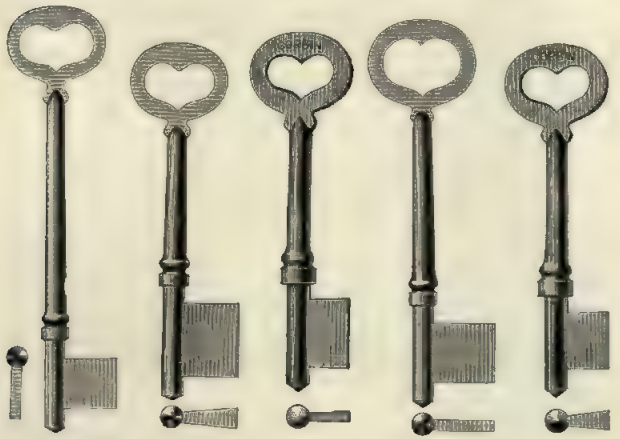
Keys Listed at 40¢ are Tinned Malleable; Keys Listed at $1.50 are Polished Steel.
Above Prices Per Dozen.

Quarter Gross in a Box.

DOOR KEY BLANKS.



179 . $1 50 **179½** . .$1 50 **179¾** $1 50 **310½** . $1 50 **181** . $1 50

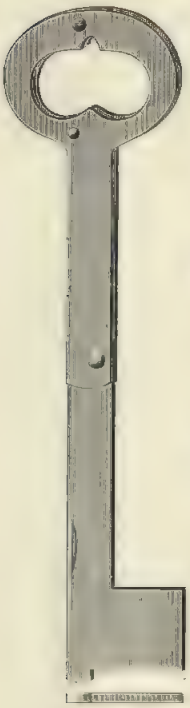


312.....$1 50 **7716**....$0 40 **310**....$1 50 **314**....$2 00 **178**....$1 50

Keys Listed at 40¢ are Tinned Malleable, Others, Polished Steel. Above Prices Per Dozen Quarter Gross in a Box.

DOOR KEY BLANKS.

Flat Steel.

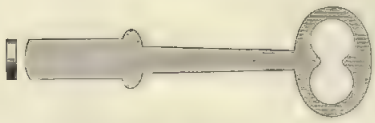


191. Nickel Plated $5 00

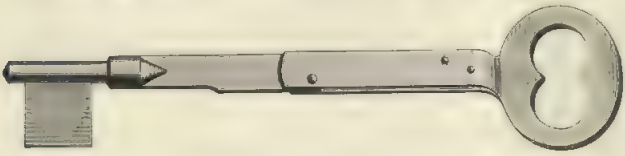
8416 $1 25

8418 $1 25

8419 $1 25



96¾. Nickel Plated $4 00



190½. Nickel Plated $5 00

Above Prices Per Dozen.

Quarter Gross in a Box

In 1905
The Indian
Won

EVERY NATIONAL CHAMPIONSHIP

EVERY HILL CLIMBING CONTEST

Except half of one.

EVERY ECONOMY TEST

THE MILE RECORD

13 Medals in the F. A. M. Endurance Contest

and an overwhelming majority of minor races and other events.

In previous years, its record was as impressive. For instance, in 1903 and '04 it won the only gold medals offered in the national endurance contests and also the only gold medal awarded motorcycles by the St. Louis Exposition.

LUCK plays no part in such remarkable and long sustained performance in public competitions. The moral is obvious.

HENDEE MFG. CO., SPRINGFIELD MASS.

The 1906 "STERLING" Built-Like-a-Watch Bicycle $16.50

(With Coaster Brake $19.75)

The name plate and the price tell the story. We have taken the entire accessory for 1906 for the well known high grade STERLING (built like a watch) bicycle which for many years has ranked as one of America's leading wheels. Made by the Pope Manufacturing Co. The latest same wheel (price and improvements) which every line year we submitted at $25 and held at the full, $45 retail price. Not a cheapened in any respect but *lettered up* this year to the limit of features. Our commercial way of selling and our modern idea of production are the reasons for the difference in price. Read the specifications—note the trade name of some part—digest the price this is ask you for it—if wise it is good business for you to handle a reliable wheel with the high grade STERLING can be bought at so little a price as $16.50?

SADDLE—The well known Hygienic Garford pattern padded with curled hair

HANDLE BAR Made from best quality seamless drawn steel, nickel plated, Can be adjusted to any position desired

FINISH Panels black with rich blue head. Rims same as frame and blue to match frame. Three coats of best enamel are applied before the striping—six of enamel, coats of Lacquer finish.

FRAME 22 and 24 inch, with 1 1/8 in. drop forged, full head pattern reinforced at all connections with brass flat, full of flowers. Rims of well shaped design. Easy to step along

HEADFITTINGS—Turned from solid bar stock two fit nickel on copper

FRONT FORK—Fork-sides made of best seamless steel tubing, drawn from top to bottom with strong forged and hand-some ornamental crown

TIRES—Goodrich "Orinoco" cactus proof single tube. We are one of the largest users of this well known tire in the world and cannot be undersold. Our "Orinoco" contains best grade of rubber in the tube—best fabric—best material for valve stem. For speed, wear and all purposes now in the market this tire is unequaled. Reinforced on a heavy pure gum tire strip.

HANGER—The well known one piece Sterling pattern. Cranks are made from drop forgings. Spindles are our own design and manufacture, and are of best material, ground and polished, to fine finish.

CUPS AND CONES—Reversible. Turned from best Jessop steel, ground, polished and hardened by the new process. The ball bearings, in sizes only as our own improved patterns.

WHEELS Standard 28 in., 32 spokes to rear and 32 to front wheel, spokes from best quality, seamless piano wire. Each spoke arranged so as to have a tensile strength of nearly 500 lbs.

RIMS—Best quality American Wooden Co's. one piece rock elm. Enameled in black and blue to match frame

HUBS—The new design ball braced hubs turned from the solid bar

GEAR—Standard 81. With 28 front and 9 tooth rear sprockets.

CHAIN—The old reliable Indianapolis pattern. 3-16 in. by 1 in. pitch.

PEDALS. The improved Sterling rat-trap pattern. The pins and bearings are turned from solid bar. Dust-proof and noiseless, highly nickeled and polished.

LADIES' "STERLING" $17.25

(With Coaster Brake $20.50

TIRES—"Orinoco" cactus proof.
FRAME 20 and 22 inch.
CRANKS—6½ inch.
GUARDS—Enameled to match frame.
COASTER BRAKE—The genuine Improved 1906 "Thor" for which extra charge is made as specified.

GUARANTEE.

Bearing parts, such as cups and cones, we will replace *without the return of parts to us* simply write us the parts needed and mention date at which wheel was bought.

All other parts defective in workmanship or material, will be replaced without charge when such parts are returned to us prepaid before December 1, 1906.

We guarantee these to be in a best grade possible to produce, and will cheerfully replace any part that may prove faulty. In case of extra wear and tear that may from any cause arise, we will replace such parts at half price.

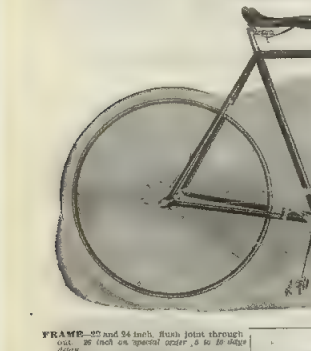
Repairs can be sent to the factory, or nearest agent. The Coaster Brake and repair parts must be prepaid as is the accepted trade custom. We will not make allowance for repairs made here. We are not responsible for loss or injury in shipment. Be careful of R. R. claims. Be plain in your address.

Please help us to give prompt service by enclosing 2c stamp and address with inquiry.

The 1906 "CENTURY" with G. & J. Tires $20.50

(With Coaster Brake $23.75)

A highest grade wheel at a fair price. The CENTURY needs neither introduction nor commendation to any customer of Butler Brothers. For nearly a decade we have handled this honestly built, honestly priced wheel. It is not possible to put more quality into a bicycle than goes into the CENTURY. A wheel of high temper, light, strong frame. A fork of vein and reading every requirement of the rider enthusiast and of the man who demands strength without clumsiness. Fitted with the most expensive tire made—the "G. & J. Clincher," used on the Goodrich Rubber Co., Akron, Ohio. Therider who fancies the G. & J. will have no other. The CENTURY is our answer to the demands of our trade for *the best in bicycles.*



RIMS—The American Wooden Co's one-piece rim. Made of rock elm well seasoned and enamel-led to match frame

COASTER BRAKE Improved 1906 "Thor" coaster hub and brake. EXTRA CHARGE FOR COASTER BRAKE.

CHAIN—The well-known 3-16 in. Crown pattern. Guaranteed to have a tensile strength of 2500 pounds.

PEDALS—The Century Rat-trap style neat and strong

SADDLE. Latest style Wheeler, high back, curved pattern, padded.

HANDLE BAR. Full adjustable, with internal expander

FINISH—A beautiful plain glossy black with gilt lines.

WEIGHT 21 to 24 pounds, according to specifications

TIRES—The Goodrich G. & J. Clincher tire. Stands in a class by itself

LADIES' "CENTURY" $21.00.

(With Coaster Brake, $24.25)

TIRES—G. and J. clincher
FRAME 20 and 22 inch
CRANKS—6½ inch
COASTER BRAKE—The genuine Improved 1906 "Thor," for which will make an additional charge as specified.

FRAME—22 and 24 inch, flush joint through out. 26 inch on special order, 5 to 10 days' delay

FRONT FORK Nickeled drop forged, flat crown with gracefully tapered sides very strong, 1 1/8 inch steerer. Fork made

HANGER—Improved one-piece, Oval flated flanks made from high-grade drop forgings.

SPROCKETS 29 front and 9 tooth rear made from 5/8 of inch steel

GEAR Standard 81

WHEELS Standard 28 in., 32 spokes to rear and 32 to front wheel. Spokes of the best quality piano wire. Each spoke arranged so as to have a tensile strength of nearly 500 lbs.

RIMS—Best quality American Wooden Co's. one piece rock elm. Enameled in black and blue to match frame

HUBS—The new design ball braced hubs turned from the solid bar

GEAR—Standard 81. With 28 front and 9 tooth rear sprockets.

CHAIN—The old reliable Indianapolis pattern. 3-16 in. by 1 in. pitch.

PEDALS. The improved Sterling rat-trap pattern. The pins and bearings are turned from solid bar. Dust-proof and noiseless, highly nickeled and polished.

BUBS The best and highest priced rear put on a bicycle. Turned from solid bar stock. We use REVERSIBLE double cones. Made exclusively for us and cannot be supplied by anyone else.

OUR 1906 "STERLING, JR." BICYCLE *Guaranteed.*

Boys'	$15.95
Girls' with mud guard	16.75

Our 1906 season's success in Junior wheels is surpassed in merit and equipment only by the Century and Sterling wheels. It is a well-set sturdy that stands up under hard usage. It has every up-to-date feature and is unsurpassed in respect our 1906 "Junior" wheels need every requirement.

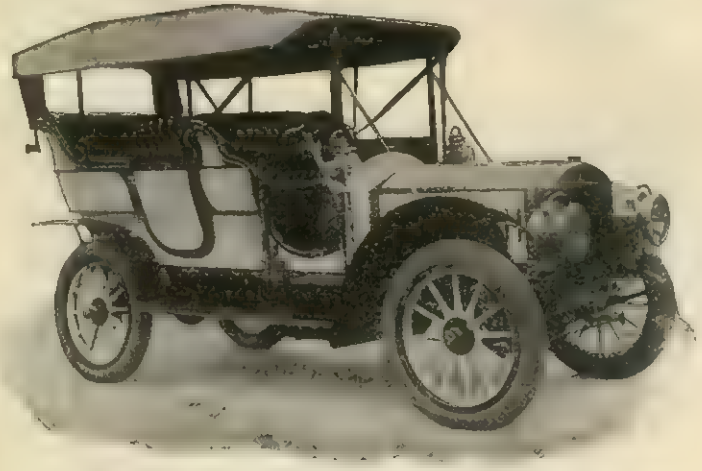
Frame 16 inch
Wheels—24 inch.
Tires Double tube.
Rims—One piece

Finish—Black enamel
Head—Enameled blue in
spearhead pattern.

60 H. P.

AUSTIN

1907 MODEL



The 1907 model has the following changes: Wheel base 115 inches (6 inches longer)—hinged hood 5½ inches higher—12 inches more depth to the tonneau. The dash of aluminum and mahogany—supports an improved folding glass front.

Ample seating capacity for 8 people.

The 1907 model contains **all** the exclusive **Austin** features.

Two Separate and Complete Ignition Systems

Sliding gear transmission (selective type—**Four Forward Speeds.**) **NEW DEVICE** for changing gears—and new interlocking system absolutely prevents wrong manipulation. **The Austin Spring Controller**—makes riding easy—at any speed over any road.

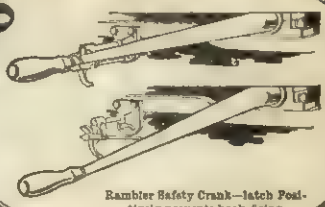
We manufacture more of the complete car in our own factory than any other maker in the United States, which enables us to guarantee the strength, quality and workmanship of every part.

Catalog containing complete information free for the asking.

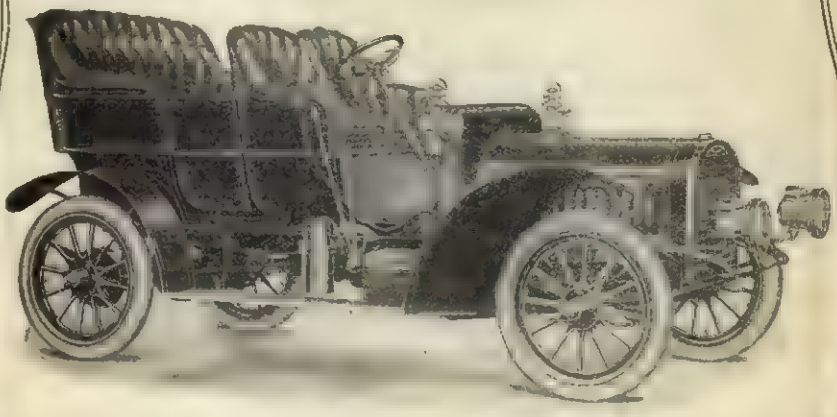
AUSTIN AUTOMOBILE CO.
Grand Rapids, Mich., U.S.A.

Rambler

The Car of Safety, Service and Power.



Rambler Safety Crank—latch Positively prevents back-firing.



Model 14, $1,750, with full equipment.

IN the development of the Rambler, while power, service and simplicity have been considered points of paramount importance, there has been no slighting of the minor details that mark the reliable automobile.

An example of this is our safety crank latch. This is so constructed that on releasing the crank therefrom to start the motor, the spark is automatically and positively retarded, thus avoiding back firing, which has so often resulted in serious injury to the operator.

This is only one of the many valuable features, described in the second edition of our 1906 catalog, which is now ready and at your service.

Main Office and Factory, Kenosha, Wisconsin.

Branches:

Chicago, Milwaukee, Boston, Philadelphia, San Francisco.

New York Agency, 38-40 W. 62nd St. Representatives in all leading cities.

Thomas B. Jeffery & Company

DEALERS

You cannot afford to overlook the line of

Moline Cars for 1907

It is a money-making proposition. The cars in design, finish, specification and price, are exceptional. They will sell themselves.

Write to-day for full particulars.

MOLINE
Automobile Company
EAST MOLINE, ILL.

PERFECT

Not so much the perfect score in the Glidden Tour; not so much the three perfect scores in the Elgin—Aurora road contest, but the every-day perfection of

THE THOMAS FLYER

in all parts of the country, on all kinds of roads, with all kinds of drivers—that's what has put the Thomas in the forefront of the chosen few really great automobiles of the world.

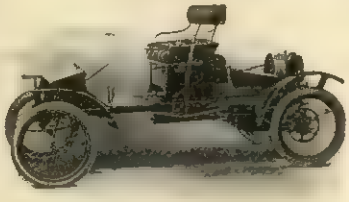
News soon about the magnificent
1907 THOMAS

THE E. R. THOMAS MOTOR CO.
1414 NIAGARA ST., BUFFALO, N. Y.
Members A. L. A. M.

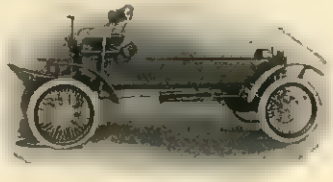
ORIENT

Friction-Drive Buckboards

1907 MODELS



Two Passenger Runabout, $400.



Delivery Car, $450.
It does the work of three teams.

Specifications for 2 Passenger Runabout

Motor	Single cylinder, 4 H. P., air-cooled.
Cylinder	3¼″ bore, 4¼″ stroke.
Steering	Tiller.
Wheel base	80 inches.
Tread	42 inches
Weight	600 pounds; crated, 800 pounds.
Speeds	5 forward, 2 reverse.
Clearance	10 inches.
Tires	Single tube, 26x2½.
	Double tube tires, $30 extra net.
	Swinehart solid tires. $35 extra net.
Speed	Maximum 25, minimum 4 miles per hour.
	Average 12 to 20 miles on ordinary roads.

Specifications for Delivery Car

Motor	4 H. P. air-cooled.
Steering	Lever.
Wheel base	89 inches.
Tread	42 inches.
Weight	670 lbs.; crated, 850 lbs.
Speeds	5 forward, 2 reverse.
Clearance	10 inches.
Capacity	600 pounds including passengers.
Tires	Same as runabout.
Carrying dimensions	62 in. long, 26 in. wide, 8⅓ in. deep.
Speed	4 to 18 miles per hour on ordinary roads.

Energetic agents wanted in unassigned territory. Write for particulars.

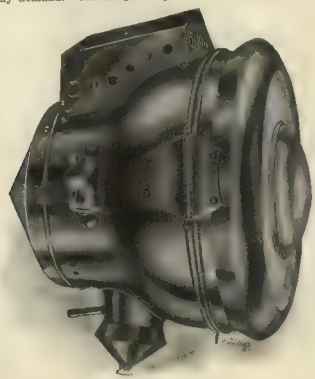
WALTHAM MFG. CO.

WALTHAM, MASS.

Members of Ass'n Licensed Auto. Mfrs.

A. S. M. Co.'s Horns and Lamps

Automobile Supply Mfg. Co., 320 Driggs avenue, Brooklyn, N. Y., are among the most successful manufacturers of horns in this country and they do a very large part of the aggregate business in domestic horns. They produce every style and size required by the trade and can meet any demand. The lamps



The "Jap" Lamp.

are made by experienced French artists, who are thoroughly versed in the business.

One of their latest lamps is the "Jap," shown herewith, which is an entirely new design and is meeting with great favor with jobbers and car manufacturers. It is equipped with an imported genuine optical front glass with bull's eye, and will throw the light an incredibly long distance.

The Mercury Arc Rectifier for Private Garages

General Electric Co., Schenectady, N. Y., is meeting with a big demand for its Mercury Arc Rectifiers for private garages, this device, which changes an alternating to a direct current, enabling the electric car owner to charge his own vehicle from the ordinary lighting current.

The Mercury Arc Rectifier Set consists of the following principal parts: Panel, tube, holder and compensating reactance.

The panel is made of the best slate, 48x24x 1½ in., with ¾ in. bevel; is given a dull black finish, mounted on 1 in. supporting pipes and supplied with all necessary pipe braces, clamps and flanges. It contains voltmeter, ammeter, double-pole switches for connecting to carriage and alternating current mains, and the necessary double-pole and single-pole switches for starting and operating the rectifier. Fuses and circuit breaker are supplied for protecting the rectifier against heavy overloads.

The tube is an exhausted glass vessel containing two anodes, one cathode and one starting anode. It is provided with metal caps for the terminals, which protect the electrodes. The leads from the anodes are connected to the compensating reactance; the lead from the cathode forms the positive side of the direct current circuit.

The holder consists of a moving member mounted on the face of the panel and provided with spring clips for holding the tube. Terminals for connecting the various parts of the tube to the panel are mounted on the panel.

The compensating reactance is connected directly across the alternating current supply mains and is either mounted on the back of the panel or placed on the floor under the panel. Leads are brought out from the reactance to a dial switch mounted on the front of the panel. By means of this switch the voltage and current may be varied within the limits of the rectifier. A tap is brought out from the center of the reactance and forms negative side of the direct current circuit.

The rectifier is now furnished in four standard sizes—10, 20, 30 and 40 amps. The complete outfit occupies a floor space of approximately 24x13 in., and is 76 in. high. It can be adapted to any direct current voltage necessary for charging vehicle batteries, and can be furnished for any commercial frequency.

ASK ANY OWNER OF
A ROYAL TOURIST

THIS LETTER IS A MILD SAMPLE

Toronto, December 2, 1905

Royal Motor Car Co.,
Cleveland, Ohio.

Gentlemen:—

My family are not particularly fond of driving in the cold weather, and I have, therefore, laid up my car until spring. As I had the honor of signing the first Canadian order for a Royal Tourist, thought you would be interested in what I thought of the machine after one season's experience, and have only to repeat what Prince Louis, of Battenberg, had to say when traveling in the machine, "a wonderful car, good enough for any man living." Quite a number of your cars have come to Toronto, and the above few words express the opinion, I think of all the owners.

Wishing you the success that your machine should bring, I am,

Yours truly,
WM. J. SMITH.

ROYAL

The Royal Motor Car Company
Cleveland, Ohio

To try an Acme is to buy an Acme

Acme Motor Cars

prove on actual, practical road demonstration every essential feature of advanced and perfected automobile engineering to-day:

The Acme claims of superiority are based on these cardinal points:

Highest Efficiency
Ease of Control
Smooth, Quiet Running
Highest Power in Proportion to Weight
Strength and Compactness
Beauty of Design

Guaranteed for 365 Days

Acme Motor Cars are built entirely and wholly by the Acme Motor Car Company, which means there are no bought parts for assembling—**no unknown quantities.**

1906 ACME CARS

SPECIFICATIONS - - TYPE XV

Price.....**$3500.** Complete with two side Oil Lights, two Acetylene Head Lights and Generator, Tail Light and Horn.

Type.....Touring Car.

Seating Capacity.....7 persons

Weight.....3900 lbs.

Wheel Base.....134 inches.

Tread.....56 inches

Clearance.....10 Inches.

Body.....Double Side Entrance Tonneau, divided Front Seats, made of best seasoned Ash, Poplar and Bass wood.

Seats.....Soft Edged, Spring Cushioned Seats and Backs width, front, 18 in., depth, 18 in., width, rear, 38 in., depth, 18 in.

Leather.....Best Quality, Hand Buffed, Pebble Grained, French Finished.

Frame.....Cold Rolled Nickel Steel, 180,000 lbs. tensile strength.

Axles.....Front Nickel Steel, drop forged, "I" Beam Spring Seats int-gral with axle; rear 1½ in. square, Nickel Steel f rged.

Clutch.....Multiple D sc, ru nning in oil, self-contained, on end thrust on bearings.

Transmission.....Practically indestructible, Selective Sliding Gear, direct drive on 3rd speed.

Speeds.....4 speeds forward and one reverse on one lever.

Gears.....Chrome Nickel Steel, oil tempered, 215,000 lbs. tensile strength.

Bearings.....Annular Ball, full type non-adjusting, Lemoine pattern.

Sprag.....Internal Ratchet in Sprocket of each Wheel

Bolts and Nuts.....All Bolts and Nuts throughout car, case hardened, and locked with Spring Lock Washers and Cotter Pins

Gearing.....Speed of Engine, 1000 R. P. M. 28-32 T. sprockets.

TYPE XIV - - $2750

Of the same practical construction as type XV. Greatly improved in arrangement and larger body than last year.

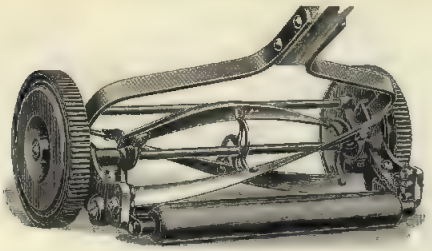
Speed	Gear Ratio	Miles per hour
3rd DIRECT DRIVE	5.86	35.1
2nd	8.29	15.6
1st	9.26	10.1
Reverse	13.66	6.6

DEMONSTRATION OF TYPE XV OR TYPE XIV BY APPOINTMENT

ACME MOTOR CAR CO. - Reading, Pa.

PHILADELPHIA BRANCH, 1335 ARCH STREET

LAWN MOWERS.

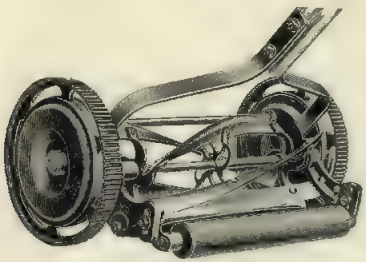


Acme.

Open Cylinder, 3 Blades, 8 Inch Wheels.

Has Shaft One-Half Inch in Diameter in an Adjustable Plain Bearing Box, Three Tempered Tool Steel Knives on Reel, under Knife also Nicely Tempered. This is an excellent Mower for the price.

Cut, Inches	12	14	16
Each	$5 25	5 50	6 00



New England, Ball Bearing.

Open Cylinder, 3 Blades, 8 Inch Wheels.

Ball Races $1^1_{\prime\prime}$ Inch in Diameter 1-4 Inch Tool Steel Balls, Patent Cone Adjustment, Cones Hardened and Ground and Cannot Work Loose. Three Tool Steel Tempered Knives on Reel.

Cut, Inches	14	16	18
Each	$7 50	8 25	9 00

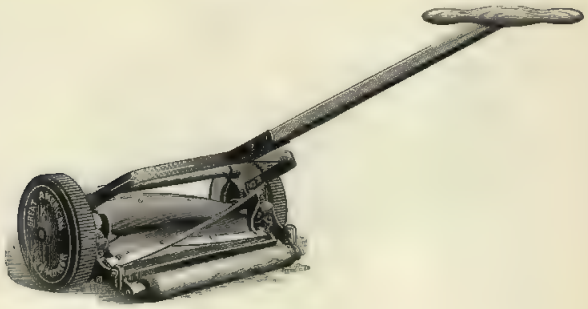
Wizard, Ball Bearing.

Open Cylinder, 4 Blades, 9 Inch Wheels.

Ball Races 1⅛ Inch in Diameter, 1-4 Inch Tool Steel Balls, Patent Cone Adjustment, Cones Hardened and Ground, and Can Not Work Loose. Four Tempered Tool Steel Knives on Reel

Cut, Inches	14	16	18
Each	$10 00	11 00	12 00

LAWN MOWERS.

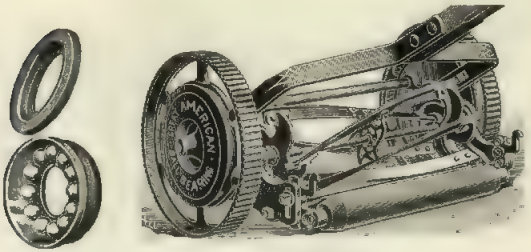


Great American.

Closed Cylinder, 3 Blades, 7 Inch Wheels.

Incased Gear, Hardened and Tempered Solid Cast Steel Cutting Knives. Has Enos Patent Yielding Bed Knife, making it positively Self-Sharpening.

Cut, Inches	12	14	16	18
Each	$15 00	17 00	19 00	21 00



Great American, Ball Bearing.

Open Cylinder, 5 Blades, 10 Inch Wheels.

Solid Cast Steel Cutting Knives, Hardened and Tempered in Oil. The Steel Balls used are of the highest grade, placed in Dust Proof Covered Steel Cups, and the adjustment is unequalled. The Ratchets or Pawls are Cast Steel, Hardened and Tempered, and noiseless in action. Can be adjusted to cut grass 3-8 to 1⅜ Inches from the ground.

Cut, Inches	15	17	19	21
Each	$22 50	25 00	27 50	30 00

Have you seen the 1906 models?

THE WHEELS OF HIGH DEGREE

ADLAKE AND CROWN

Our 1906 line is the best in style, finish and workmanship we have ever turned out.

Write for catalogue and prices to-day, you will take no chance if you order samples immediately.

Do you want to increase your bicycle sales? You can do so by selling the **CROWN.**

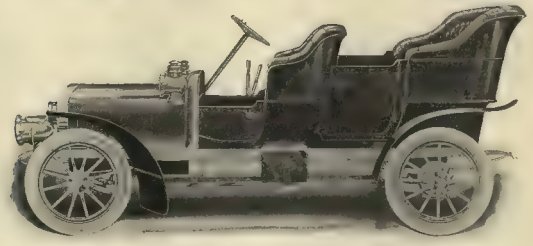
FULLY PROTECTED UNDER ALL PATENTS

GREAT WESTERN MANFG. COMPANY

La Porte, Indiana, U. S. A.

ADLAKE BICYCLES CROWN

Aerocar



The Car for to-day—to-morrow and years to come.
Built by Practical Men.

THE **Aerocar** comes as the fulfillment of all that has been proven best in the air-cooled motor car. It represents the efforts from years of constant experimenting, testing and proving a motor car of enduring serviceability—superior in mechanical design and construction, and carrying all the luxury and beauty in modern motor car equipment.

It is the only air-cooled motor car which overcomes all obstacles and objections in practical test.

The motor is the very soul of an automobile, and while the **Aerocar** is ideal in the graceful lines of body, in its roomy luxuriousness and elegance of equipment, it is in the air-cooled motor that its distinguishing superiority lies Its motor is of wonderful efficiency—it is the crowning result of ten years constant effort along most practical investigation studying and experimenting with all the adopted methods and designs of air-cooled motors, selecting the best of each, improving and adding to, until we have for the **Aerocar** an air-cooled motor which may rightly be called perfect in operation and for satisfactory results—always ready, night or day, in the hottest of mid-summer or the coldest zero of mid-winter, to meet every reasonable demand.

THE AEROCAR, 1906.

22-26 h.p. Four cylinders. Five passengers. 45 miles an hour 104-inch wheel base. Shaft drive. Sliding gear transmission. Three speeds and reverse. Perfect disc clutch. Hollow steel dash. Four sight lubricators on dash. Tool box on running board. 34 x 4 tires 9-inch road clearance. Weight, 2000 pounds. Fully equipped, ready for the road, including two large gas headlights, **$2800 f. o. b. Detroit.**

Ready and anxious to demonstrate any time or all times.

Deliveries. Ready to deliver cars February.

Will be exhibited and demonstrated at the Automobile Shows in New York and Chicago.

The dealer who has the selling agency of the **Aerocar** will have a gold mine. Territory being rapidly taken up. If interested write us promptly.

THE AEROCAR CO., Detroit, Michigan

AIR RIFLES.

20th Century "Take Down" Daisy.

PER DOZEN

No. 1—20th, Century. Shooting Darts or Shot. Length of Rifle, 31 inches. Shoots BB or Darts. Can be taken apart and packed in small space. Length, 31 inches. Weight, 1 lb., 12 oz. ..... $11 [illegible]

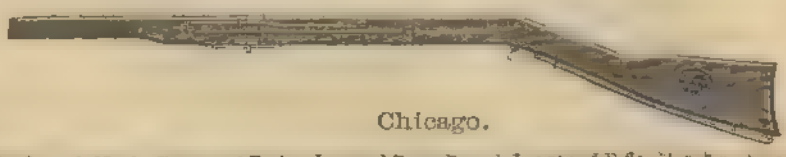
One Dozen in a Case. Weight, about, 28 lbs.

Daisy "Take Down" Repeater.

PER DOZEN

No. 10—Daisy Repeater. Magazine holds 48 Air Rifle Shot. Repeating attachment extremely simple. Length of Rifle, 31 inches. Weight, about 1 lb. 14 oz. $5.10

One Dozen in a Case. Weight, about, 28½ lbs.

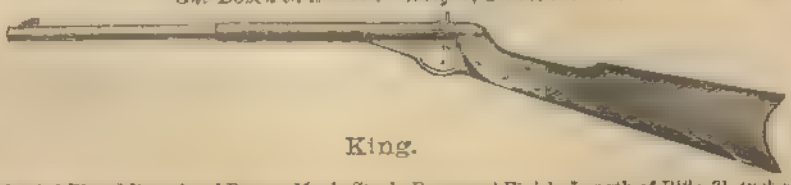


Chicago.

PER DOZEN

Chicago, Entire Length Maple, Rosewood Finish, Inserted Brass Barrel, Length of Rifle, 36 inches. Shoots No. 6 Air Rifle shot. Weight, 1 lb., 10 oz. $11.25

One Dozen in a Case. Weight, about, 32 lbs.



King.

PER DOZEN

No. 0—King. Nickel Plated Barrel and Frame, Maple Stock, Rosewood Finish, Length of Rifle, 31 inches. Shoots BB or Air Rifle Shot. Weight, 2 lbs., 3 oz. $12.00

One Dozen in a Case. Weight, about, 28 lbs.

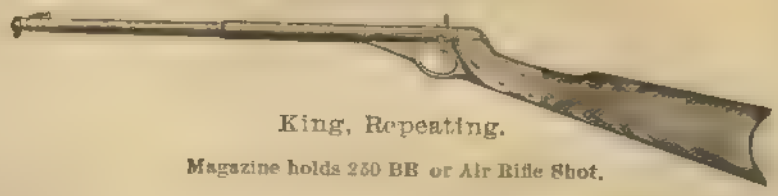
No. 12 Queen.

PER DOZEN

No. 12—Queen Take Down, Shoots Ordinary BB Shot or regular Air Gun Darts, easily taken apart the Barrel is [illegible] Length of Rifle, 36 inches. Weight, in Case, about 28 lbs. $24.00

Packed One in a Fancy Box, 4 inches Wide, 1¾ inch Deep, and 14 inches Long.

AIR RIFLES.



King, Repeating.

Magazine holds 250 BB or Air Rifle Shot.

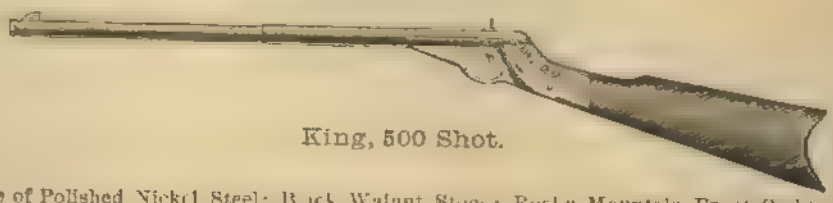
PER DOZEN

No. 8 King Repeater, Same as the regular King, with the addition of the Patent Tip on the end of the Barrel; Weight, about 3 lbs $16 00

One Dozen in a Case; Weight, about 31 lbs.

We recommend the use of **Air Rifle** Shot in Air Rifles, it being a size especially adapted to them.

For Shot, see Page 1647.



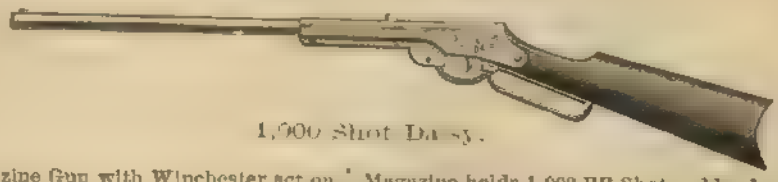
King, 500 Shot.

Made of Polished Nickel Steel; Black Walnut Stock; Rocky Mountain Front Sight, Rear Peep Sight; Magazine holds 500 BB or Air Rifle Shot.

PER DOZEN

No. K500—Length 34 inches; Weight 2½ lbs $20.00

One Dozen in a Case. Weight, about 31 lbs.



1,000 Shot Daisy.

A Magazine Gun with Winchester action. Magazine holds 1,000 BB Shot and loads automatically. Working parts made of Steel and Brass and so arranged that anyone can take the gun apart and put it together. Stock of Black Walnut, highly polished. Shoots accurately and with great force.

PER DOZEN

No. 1000—1,000 Shot Daisy, Length, 36 inches; Weight, about 3 lbs. $24.00
No. 500—500 Shot Daisy, Length 32 inches; Weight, about 2½ lbs. 22.00

One-half Dozen in a Case.

Air Rifle Shot.

We recommend this size for Air Rifles. It is between B and BB and runs 58 pellets to the ounce. When ordering shot specify this size as it runs more uniform and will give your customers better satisfaction.

Darts.

The use of Darts has greatly increased the sale of Air Rifles, as it allows their use at indoor target practice. We carry a dart made expressly for our Nos. 00, 1, 5 and 12 Rifles. Assorted colors.

Per Dozen $0.60

"ARTISTS' PURE WHITE" Stock Pattern HAVILAND FRENCH CHINA.

Pure white, high-class china, for those who prefer pure white for table use and for those patrons who insist have a perfect, unblemished article. Clear white, full weight, transparent. New tapering shape, scallop column design, shade and celery trays handled, fancy cake plates and trays with D open handles, olive or usefu. dishes in quaint scallop design with open handle. Each piece with rare embossed border and scalloped edge. In open stock, no pkg. charge.

R375, Bread and Butter Plate 6 in. Doz. $2.10

R376, Tea Plate—7¼ in. Doz. $2.52

R377, Breakfast Plate 8¼ in. Doz. $3.00

R378, Dinner Plate—10 in. Doz. $3.35

R379, Oxide Cup and Saucer—Cup 2¼ in., saucer 5¾. Doz. $3.15

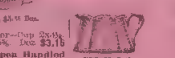
R380, Open Handled Ice Relish—6x9½ in. Doz. $3.35

R381, Sauce Dish, 5¾ in. Doz. $1.80

R382, Deep Scallop Salad Dish—8½ in. Each 63c

R383, Open Handled Cake Plate—9 in. Each 83c

R384, Celery Tray—12½ in. Each 59c

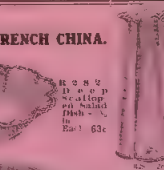


R385, 5½ in. Each

R386, 6¼ in. Each

R385, Cream Pitcher—Ht. 2½ in. Each 28c

R386, Covered Sugar Bowl Ht. 2½ in. Each 47c



R387, Tall Tankard Pitcher 8½ in. Each, 72c

R388, Chocolate Cup and Saucer—Cup 3¾ in., saucer 6¾ Doz. $3.78

R389, Chocolate Pot—Ht. 9½ in. Each, $1.05

R390, Open Handled Fancy Shaped Tray 10x13½ in. Each $1.38

COMPOSITION OF GERMAN AND FRENCH TEA AND DINNER SETS.

56 piece Tea Set—2 tea pot, 1 covered sugar, 1 cream pitcher, 1 bowl, 2 cake plates, 12 cups, 12 plates, 12 fruit saucers, 12 tea cups and saucers.

65 piece Dinner Set—6 tea plates, 6 soup plates, 6 dinner plates, 12 fruit saucers (6 individual butters), 6 tea cups and saucers, 1 baker, 1 medium platter, 1 large platter, 1 covered vegetable dish, 1 sauce boat, 1 pickle, 1 salad, 1 covered butter, 1 tea pot, 1 sugar, 1 cream pitcher, 1 slop bowl.

100 piece Dinner Set—12 individual butters, 12 dinner plates, 12 tea plates, 12 soup plates, 1x sauce dishes, 12 tea cups and saucers, 2 covered dishes, 1 baker, 1 pickle dish, 1 sauce boat and stand, 1 baker, 1 salad dish, 1 covered butter and drainer, 1 small platter, 1 medium platter, 1 large platter.

108 piece Dinner Set—12 dinner plates, 12 tea plates, 12 soup plates, 12 tea cups and saucers, 12 individual butters, 12 sauce dishes, 1 soup tureen, 2 covered dishes, 1 pickle dish, 1 sauce boat and stand, 1 baker, 1 salad dish, 1 covered butter and drainer, 1 small platter, 1 medium platter, 1 large platter.

113 piece Dinner Set—12 tea plates, 12 breakfast plates, 12 dinner plates, 12 soup plates, 12 fruit saucers, 12 individual butters, 12 tea cups and saucers, 1 large platter, 1 extra large platter, 1 baker, 1 covered vegetable dish, 1 covered butter, 1 sauce boat, 1 pickle, 1 [illegible] tea pot, 1 bowl.

130 piece Dinner Set—12 tea plates, 12 [illegible] dinner plates, 12 soup plates, 12 individual butters, 12 [illegible] sauces, 6 coffee cups and [illegible] cups, 1 platter, 1 medium meat platter, 1 large meat platter, 1 extra large meat platter, 1 covered vegetable dish, 1 soup tureen, 1 sauce boat, 1 pickle, 2 large pitcher, 1 covered sugar, 1 cream pitcher, 1 slop bowl, 1 covered butter.

"AMERICAN BEAUTY ROSE" OPEN STOCK LINE OF GENUINE HAND PAINTED CHINA.

Art store goods to retail at popular prices. Each piece hand painted and is a masterpiece of the artist who signs the name. Equal in artistic value to the most French work at a third the price. The decoration is shaded dark green with delicately blended pink and yellow tints, wide gold band edges, gold handles, "American Beauty" cluster roses in colors and enamel, picture effects. Each piece with hand painted trade mark. A line when [illegible] has been added to this season on account of its increasing popularity. **In open stock no package charge no cartage charge.**

R1802, Bread and Butter Plate 6 in. Each 33c

R1803, Tea or Breakfast Plate 7½ in. Each 35c

R1804, Dinner or Tea Plate—9 in. Each 39c

R1805, Breakfast or Dessert Plate—8¼ in. Each 65c

R1806, Cake Plate 10 in. Each 89c

R1807, Cake Plate or Dish [illegible] in. Each $1.00

R1808, Cake Plate or Dish [illegible] in. Each $1.25

R1807, Chop Plate—12½ in. Each in pkg. Each $1.50

R1808, Afternoon Tea Cup and Saucer [illegible] Each 36c

R1809, Tea Cup and Saucer [illegible] Each 63c

R1810, Chocolate Cup and Saucer, Cup 3¼ in., saucer 5½, rose decorated handle and cut [illegible] Each in pkg. Each, 65c

R1831, Sauce Dish [illegible] Each 32c

R1827, Leaf Shape Olive or Nut Dish 5½ in., [illegible] Each 35c

R1811, 4½ Each

R1812, 6 in. Each

R1813, Shell Sauce Dish—5½ in., hand set shell shape. Matches R1831, oblong or berry dish. 6 in. pkg. Each 25c

R1814, Large Bon Bon, or Nut Dish—6½ in., extra deep. Suitable for oatmeal. 6 in. pkg. Each 42c

R1814, Footed Nut [illegible] ht. 2¾, 4 gold feet [illegible] Each 69c

R1815, Covered Bonbon or Puff Box—Diam. 4½, ht. 3¼, decorated, box and cover [illegible] Each in pkg. Each 65c

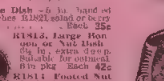
R1816, Leaf Shape Tray 5x8 in. Each 69c

R1817, Comb Brush or Hat Tray—Each [illegible] Each $1.00

[illegible] Each 67c

R1810, Celery Tray 12x6½, open ends and deep. Each in pkg. Each $1.25

R1820, Round Salad [illegible] Each $1.19



R1821, Salad or Berry Dish, 10 in., handled, shell shape. Matches R1813, each, 25c. Each in pkg. Each $1.35

R1825, Cracker Jar or Cracker Covered Pail [illegible] Each $1.50

[illegible] Each

[illegible] Each

R1826, Tea Pot—[illegible] in. Each $1.00

R1824, Chocolate Pot [illegible] in., scallop footed [illegible] Each in pkg. Each $1.42

R1823, High Cracker Jar [illegible] in. Each in pkg. Each $1.35

R1822, 4 in. Each

NO PACKAGE CHARGE CARTAGE CHARGE.

OLIVER PATENT WOOD TRIMMERS.

NO. 0 BENCH TRIMMER

FIG. 9404.
Made in two sizes, Nos. 2 and 4.

Cut steel gears and rack located out of path of shavings. Knee of frame bolted and finger clamp [illegible] adjustable angles for [illegible] on [illegible] table. No. 6 machine furnished with column or stand if desired. Prices given below

NO. 1 BENCH TRIMMER.

FIG. 9405.

Also mounted on column or standard. Two sets of holes for taking up wear of the knives. Gauges cover 45 to 90 degrees. Triangle stop [illegible] from flange.

Prices given below

FIG. 9406
Made in three sizes, Nos. 2, 3 and 4.

This gauge has end of arm journaled on hub permanent attached to [illegible] bracket [illegible] The machine has adjustable bearings to eliminate lost motion. Provided with swivel top. Gears and rack [illegible]

FIG. 9407
No. 4 Universal Trimmer

Also made for use on bench, or mounted on standard. Gauges run from 45 to 135 degrees, so paper may be cut square and angle and [illegible] Table [illegible] cutting power and [illegible] for heavy service. Cut steel gears and rack are driven by worm

PRICES, FOR NOS. 9404 TO 9407

No.	Length of Stroke of Knife, Inches.	Thickness of Cut, Inches.	Trimming Area, Square Inches.	Floor or Bed Space.	Net Weight, lbs.	Price,
0	6	1	6 x 6	12 x 12	42	$ [illegible]
1 with [illegible]	10	4 1/8	24	18 x 20 1/2	83	45 00
1 with stop and [illegible]	10	4 1/8	24	18 x 20 1/2	110	55 00
1 for bench.	10	3 5/8	24	9 x 20 1/2	73	35 00
2	12	5 1/4	30	1 1/2 x 21	260	140 00
3	15	6 1/2	45	18 x 24	525	190 00
4 for bench	18	8	72	24 x 32	810	400 00
4 with stand	18	8	64	24 x 32	875	450 00
5	18	8	64	24 x 32	1,000	500 00
4 on column	14	7	56	24 x 32	875	450 00
5	18	8 1/2	80	14 x 18	875	425 00
6 for bench	24	12	144	30 x 36	1,500	750 00
6 with stand	24	12	144	30 x 36	1,700	850 00
6 on column	24	12	144	30 x 36	1,600	800 00

THE FAIRBANKS COMPANY

The Most Complete Superb Luxurious Line of Motor Cycles in the World

Marsh Model D $150

Metz $210

Tourist $225

Double Cylinder $275

Tricars and Tandem Attachment

AMERICAN MOTOR CO.

BROCKTON, MASS.

GOLF CLUBS.

We are Sole Agents for

D. Anderson & Sons' (St. Andrew's, Scotland) Golf Clubs

Driver. Bulger. Brassie. Brassie-Bulger. Brassie Niblick.

Anderson's Socket Head Pattern.

This pattern Club has been found to have certain advantages over regular spliced patterns, which are appreciated by players. Head is bored three inches, forming a socket, and shaft is glued and driven in hard. A slight winding covers joint, making it waterproof. A longer shaft is given by this, and spring is better balanced than is possible otherwise. The driving powers of the Socket Clubs are unequalled.

Wood Socket Drivers . **$2.80** Brassie Socket Drivers **$3.00**

Anderson's Wood Golf Clubs

Are made at St. Andrew's, Scotland, and are entirely hand-made. The heads are made from the best selected seasoned beech and persimmon. The shafts are made from the very best selected A. white second growth hickory, well seasoned. These clubs are guaranteed perfect as to shape, head weights, while the finish is the best.

Brassie-Drivers	$2.40	Brassie Bulger Drivers	$2.40
Drivers	2.30	Bulger Drivers	2.30
Putters	2.30	Spoons	2.30

Cleek. Lofter. Mid-Iron. Mashie. Niblick. Putter.

Anderson's Iron Golf Clubs.

Driving Irons	$2.40
Cleeks	2.40
Lofters	2.40
Niblicks	2.40
Mid-Irons	2.40
Mashies	2.40
Driving Mashies	2.40
Gun Metal Putters	2.40

Wood Heads, Drivers ...**$1.10 each** Wood Heads, Brassies ... .**$1.30 each**

Best Hickory Shafts ... **$1.90 each.**

See Terms page 3, and Discount sheet next back cover

APPERSON

The A=1 Car of the Glidden Tour

We claim the best general performance of any car in the Glidden Tour. No mechanics, no repair wagon following, no repairs distributed at controlls ahead, no preparation for trouble, no factory assistance of any kind or nature. The Apperson car was driven by a customer for his own pleasure. Three ladies, its owner and his son composed the party who made a perfect score, save eleven minutes for tire trouble. This could have been avoided had the controlls not been doubled the last two days.

This car started from Chicago July 5th, completed the trip to Bretton Woods and return to Chicago, 3500 miles, including the Glidden Tour without a moment's trouble with its machinery. This car was a 1907 model. All 1907 models will be equally as good.

APPERSON BROS. AUTO CO.

KOKOMO, IND.

BRANCHES

New York **Boston** **Philadelphia** **Chicago**

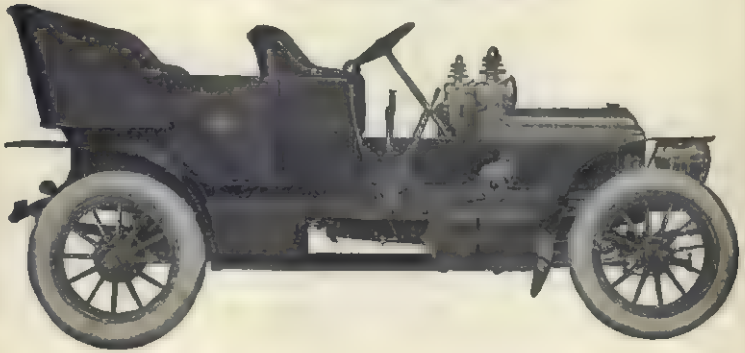
Members A. L. A. M.

NOT A REPAIR—NOT A REPLACEMENT

Do You Understand That—NOT A REPAIR NOT A REPLACEMENT—NOT EVEN AN ADJUSTMENT

So much that is misleading has been written and said about the Glidden tour that it almost discourages any attempt to tell the actual facts. Nevertheless, we deem it a duty we owe to the public and to ourselves to give you an unvarnished statement of the absolutely unique and superb achievement of

THE TWO-CYCLE ELMORE



As Admiral Schley said on a certain celebrated occasion: there's glory enough for all.

Any car that came through the Glidden tour deserves unstinted praise and credit.

But the public is entitled to know which particular car made the really remarkable showing.

Studying the situation calmly, coldly and crit'cally we don't believe that that is hard to demonstrate.

It is admitted, we suppose, that even among the perfect scores there was not a car that came through without any repairs, replacements or adjustments. It is admitted—must be admitted—that none of these cars came through without frequent or infrequent tinkering. It is a matter of common knowledge that some cars made such whole-changes as the substitution of entire new axles.

It is admitted that none of the "perfect" cars were able to take the worst hills without great effort; that few—very few—of them were even able to do so on the low gear.

These facts are all matters of history.

Everybody knows them to be true.

Now they are not true—not one of them—of the two cycle Elmore

It is absolutely true that there was not a single repair or replacement made on the E'more—not a single repair or replacement—big little or indifferent, not even the removal of a spark plug. It is absolutely true that there was not a particle of tinkering on the Elmore from Buffalo to Bretton Woods.

It is absolutely true that not a single part or part of a part was substituted on the Elmore.

It is absolutely true that not a single hill was encountered that the Elmore did not take on the low speed, without effort, and with perfect ease

It is absolutely true that not a single hill was climbed that did not find the Elmore as fresh at the top as at the bottom.

It is absolutely true that this remarkable showing held good clear from Clyde to Buffalo, Buffalo to Bretton Woods, to Boston, New York and back to Clyde—a distance of more than 2,500 miles.

Send for the little book which explains why the Elmore made such a magnificent showing.

The Elmore Mfg. Co., 904 Amanda St, Clyde, Ohio.

SEARCHING

THE RECORDS FOR EARLY DELIVERIES.

NOW IS THE TIME

To Place Your Order for Your

'06 MOUNT.

Book Your Order For An

ARMAC

And you are **SURE** of obtaining the most advanced improvements—**SURE** of reaching your destination without fatigue—**SURE** of reliable, steady running machine, delightful by reason of the elastic non-jerking English belt transmission.

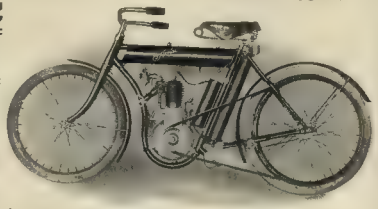
The complete absence of vibration and noise, phenomenal hill climbing power and wonderful range of speed makes

The Armac a World Wide Favorite.

Ample power at low speed of motor to take two riders over ordinary roads with a reserve of fully 1½ H. P. to be applied as needed on rough, sandy or muddy roads or steep grades

ARMAC

Motor Cycles
For Business Use.
Side Car Attachment
For Family Use.
Box Delivery
For Commercial Use.
Neat,
Noiseless,
Reliable,
Perfectly Balanced and
Fully Guaranteed



Space will not permit of detail description of the practical, up-to-date improvement of the

1906 Model 3 H. P. ARMAC.

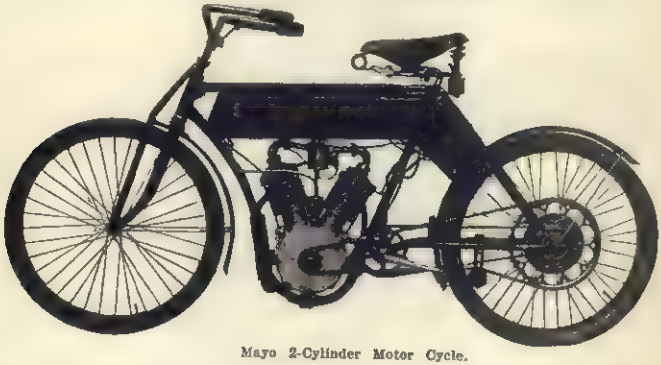
Our catalogue is free on request and your name on our mailing list will keep you posted regarding the motorcycle that is guaranteed for all around practical business purposes or transcontinental touring.

Our special inducements to **EARLY** agents will interest you.

ARMAC MOTOR CO. 472-478 Carroll Ave., Chicago. ::

Mayo 2-Cylinder Motor Cycle

The Mayo Damper Co., 355 Walnut St., Pottstown, Pa., are now making a 4 H. P. 2-cylinder model of the "Mayo" motor cycle. The power transmission is by chain. Ignition is effected by 2 spark coils and 3 dry cells, the spark being regulated by grip control. A special exhaust lift is provided, making starting very easy. G. & J. tires are used 2¼-inch front, and 2½-inch rear. The machine is also fitted with rear separate tandem attachment, giving a carrying capacity of two. The Mayo carburetor, a special feature of all Mayo machines, is of course used.



Mayo 2-Cylinder Motor Cycle.

Improved Morrow Motor Hub Brake

The Eclipse Machine Co., Elmira, N. Y., have made a decided improvement in connection with their heavy motor hub brake. It is a generally admitted fact that more or less inconvenience is caused by the threaded sprocket at the left end of the chain-driven coaster brake, becoming loose, and no matter how tightly the sprocket is held down and locked in place with a jam nut, the vibration and constant pull will in time work the sprocket loose a fraction of an inch, giving a sort of forward and backward movement. This has been obviated by simply placing the left sprocket in place on to the brake with four good-sized tool keys, the sprocket being not even threaded. The four keys would be sufficient to hold the sprocket without any danger of working loose, but as an extra precaution a large lock nut is screwed down against the sprocket, and, together with the keys, holds the whole device firmly in place.

Torpedo Race Winner

On Labor Day, September 3, nearly 5000 persons attended the fourth annual interstate motorcycle meet under the sanction of the F. A. M., at Mona Park, Muskegon, Mich., and which was held under the auspices of the Muskegon Motorcycle Club. Charles Blankenheim, riding a Torpedo motorcycle, won two of three races. Chicago riders won every event in which they contested and getting both F. A. M. Western championships that were decided. Following are the summaries:

Five-mile open—Charles W. Van Sicklen; J. A. Turner, second; Charles Blankenheim, third (all are of Chicago). Time, 7.03.

Mile open F. and A. M. championship—

Champion James F. Moran, of the winning Irish-American team, Revere Beach, Mass., 22-hour race, record 588 miles, paced by Libby on a Marsh Motor Cycle. Moran states that the Marsh machine proved more reliable for the entire 22 hours than any pacing machine he has ever seen.

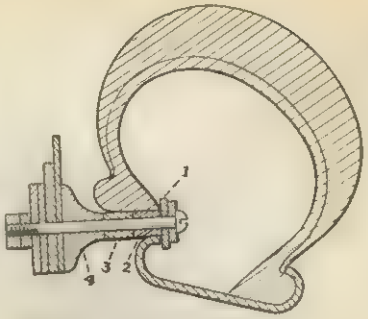
The "Minute" Clincher Tire Adjuster

The Long & Mann Company, Rochester, N. Y., manufacturers of automobile tools and accessories, have placed on the market a new clincher tire adjuster called the "Minute." The manufacturers claim that by means of this adjuster, any clincher tire may be rolled off or on in one minute. The "Minute" adjuster is made up of four parts: the Wheel Support, Hub Attachment, Tire Attachment and Pryer, the last also being used as a handle when outfit is adjusted.

The "Minute" Tire Adjuster. A, lip which is placed between tire and rim, allowing lip B to rest on outside edge of rim. With tire attachment held in this position shoe is pried up with pryer over roller 1 shown in sectional cut. When bead of tire rests on roller 1, pryer is removed, tube E is slipped through loof F of tire attachment and covered ring D placed over hub. Pryer or handle C is slipped into tube E of hub attachment, wheel support G is placed under nearest spoke with one hand and with the other handle C is pressed down and slightly outward. The position of the wheel support is then changed and the handle C again pressed down successively until the entire bead is lifted out of the clinch.

The Tire Attachment is fitted with four sets of rollers which reduce friction to a minimum. Scratching or defacing hub or spokes is prevented by a felt covering on Hub and Spoke Attachments. This device is made of high test steel throughout, and is so constructed that injury to the shoe or inner tube is impossible. Price of the "Minute" is $10.00.

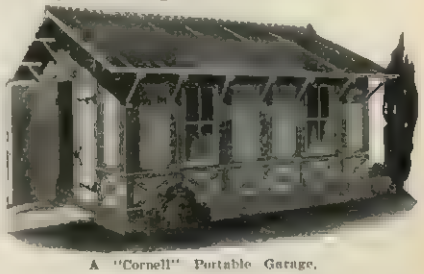
The "Minute" Adjuster in use.



Sectional view of tire and "Minute" Tire Adjuster. 1 rolls between rim and tire bead. 2 rolls on top of rim. 3 and 4 roll on outside edge of tire.

"Cornell" Portable Houses

Wycoff Lumber and Mfg. Co., of Ithaca, N. Y., are now manufacturing portable houses for all purposes which are shipped "knocked down" ready for instant erection by inexperienced persons. "Cornell" houses, as they are appropriately called, are made of thoroughly seasoned, carefully selected lumber and are furnished in solid, interchangeable sections which are tongued, grooved and firmly bolted together. Each house is set up complete in the factory, then knocked down and shipped. A system of triple checking is employed to prevent the omission of a single bolt or other fitting, as such an oversight might cause the purchaser delay and annoyance. To preserve the wood a specially prepared primer is used and on top of this are placed two coats of best white lead and linseed oil tinted to suit. Besides a wide variety of designs shown in their catalog they are prepared to furnish plans and estimates for any requirements on payment of a deposit of $10 They are making a specialty of automobile houses and have a number of stock designs to chose from.



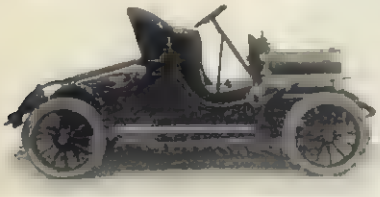
A "Cornell" Portable Garage.

The Latest Models "Carter-Cars"

The Motorcar Co., Detroit, Mich., are now furnishing "Cartercars" fitted with the well-known Artz folding tonneau. This is known as Model "E" and has a wheel base

"Cartercar" Model "E" fitted with Artz folding tonneau, open. Price $1250

of 94 ins., centre to centre; tires 30 by 3½ inches; 4 cycle, 2-cylinder motor, 5 by 4½ inches opposed, set crosswise, in front under hood, friction disk speed change; and



Model "E." "Cartercar" with Artz folding tonneau, closed.

chain drive to divided rear axle. The weight of this car is about 1650 lbs. With this tonneau it furnishes seating accommodations for 4 persons, but as the tonneau can

Model "D" "Cartercar" runabout. Price $1200, without top

be folded up the car can instantly be converted into a speedy runabout. A feature of this car as well as with the earlier models, is the "Carter" friction disk speed change. Model "D" is the latest Cartercar runabout.

The illustration is of a Model "D" machine sold to the fire department of Detroit. The car is used for many purposes by the department and for transporting the secretary and other officers about the city. The machine is similar to the company's Model "B" runabout. Price is $1200, without top.

C. P. Smith, of Rochester, N. Y., recently made a run from Rochester to Buffalo with a Babcock electric car made by the Babcock Electric Carriage Co., of Buffalo. The distance covered was 110 miles, including demonstration trips in Batavia and Le Roy, and the trip was made in one day. The section from Batavia to Buffalo, 40 miles, was covered in 2 hours 17 minutes, and from Rochester to Batavia, 39 miles, in 2 hours and 30 minutes.

The above is a reproduction of a photograph of nearly all the Branch Managers and Salesmen of the Firestone Tire & Rubber Co., Akron, Ohio, who held their annual Firestone Convention on Aug 17th and 18th, at the company's general offices at Akron, Ohio. The persons in the photograph reading from left to right are: W. W. Wuchter, E. E. Cahow, F. Z. Binkard, R. J. Firestone, G. D. Armstrong, J. L. Keller, W. A. Wells, T. J. Gleim, J. F. Singleton, R. V Smith, C. E. Jackson, A. G. Partridge, H. S Firestone, S. G. Clarkhuff, W. P. Berrion, O. O. Petty, E. E. McMaster, O. R. Cook, J. D. Hodgkins, W. E. Fouse, F. R. Talbott, J. E. McGinness, A. J. Greene, W. D. Rockwell, J. L. Gibney, J. M. Gilbert Several new branches have been established by the Firestone Co. during the past fiscal year.

The "Springfield" Speedometer.

A new speedometer called the "Springfield" has recently been placed on the market by The R. H. Smith Mfg. Co., of Springfield, Mass., a concern which has been established in similar lines since 1865.

In this instrument, by a novel application of the most approved form of centrifugal governor, the pointer rises by direct and positive

The "Springfield" Speedometer with Veeder Odometer and attaching fixtures.

action upon the face of a vertical indicating scale or dial, as shown in the illustration. It is sensitive to the slightest variation of speed, but cannot be diverted from its true position by any jolt or shock which the car may sustain. Its accurate indication of speed is guaranteed at all points on the scale.

Every motion is balanced and consequently nearly frictionless. All internal parts are of steel, and hardened where advantageous. All bearings are self-lubricating. The case is dust and waterproof. The dial is self-luminous and will show position of the pointer after dark. The case and trimmings are of phosphor bronze, which matches the yellow brass fittings of most new cars.

The instrument attaches to the dashboard by a jointed bracket, permitting it to set at any desired angle. Each is supplied with a flexible shaft with improved double flexible jacket of correct length for the car on which it is to be used, but the bracket by which the pinion is attached to the steering knuckle is universal and will adjust in any direction, so as to fit any American-built car.

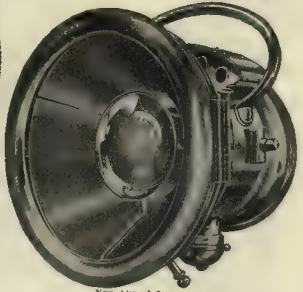
This bracket also has a valuable exclusive feature by which if the pinion should be thrown out of mesh with the gear on the hub by the lodging of any hard substance, it will not only cause no strain, but will automatically return to the correct pitch line as soon as the gear has cleared itself.

Two standard instruments are being made, one for general use, registering from 1 to 50 miles, the other for high power cars, registering from 1 to 80 miles. Both sizes are offered with and without the odometer, which is the well-known Veeder trip and season register instrument. This is ingeniously mounted upon an independent shaft, which is coupled between the flexible shaft and the speedometer. It may be removed and the shaft coupled direct without it, the clutch of the shaft fitting the clutch on the spindle of either.

The price of the 50 mile speedometer and fittings is $25.00 without odometer, or $35.00 with; price of 80 mile instrument, $35.00 and $45.00.

The Atwood Headlight.

Atwood Mfg. Co., Amesbury, Mass., have brought out a new headlight of popular type designed to meet the large and insistent de-



New Atwood Lamp.

mand for a lamp on these lines. The lamp illustrated has a parabolens reflector, and they also make the same style with a margin mirror reflector. Various sizes are offered.

The triple show number to be issued February 1st will be another record breaker. Don't miss it—send in your subscription promptly on blank you will find on page 444.

The "Arnold" Tire Safety-Valve

The "Arnold" Tire Safety-Valve, manufactured by the Tire Safety-Device Co., 208-214 West 124th St., New York, is shown herewith. It is a well known fact that excessive air pressure causes a very large proportion of the troubles which beset the pneumatic tire and is mainly responsible for the many serious accidents resulting from the failure of tires. Hot weather also causes the air in the tire to expand, thus increasing the strain on the tire fabric already slightly softened by the heat often resulting in a blow-out. To overcome these troubles is the object of the "Arnold" Tire Safety-Valve, which is an extremely simple and effective device for preventing excessive pressure in pneumatic tires. The manu-

Perspective view of the "Arnold" Tire Safety-Valve.

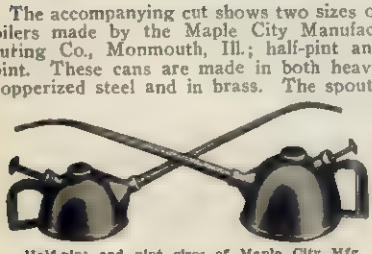
facturers claim, that a tire fitted with this valve properly adjusted cannot explode from excessive air pressure no matter what the cause may be. The "Arnold" Tire Safety-Valves can be applied to a car in one minute. Directions for applying are as follows: First make sure that the plunger in tire inflating valve is screwed tight to its seat, then inflate tire in usual manner. If the tire is blown a little harder than usual no harm will be done. Now screw on the "Arnold" Tire Safety in place of the common valve cap. If the pressure is in excess of what it should be the tire will be instantly relieved and any subsequent excessive pressure rendered absolutely impossible, as the valve will blow off if the premeditated pressure be exceeded by even an ounce.

All valves furnished are properly adjusted to maintain any stipulated pressure, and fully tested. If it is desired to change the adjustment of the valves, the same will be done by the manufacturers free of charge. In ordering state weight of car, and size and make of tire.

Price of the "Arnold" Valve is $3.00 per set of four, and $2.00 per pair for motor cycles.

New Automobile Oilers

The accompanying cut shows two sizes of oilers made by the Maple City Manufacturing Co., Monmouth, Ill.; half-pint and pint. These cans are made in both heavy copperized steel and in brass. The spouts

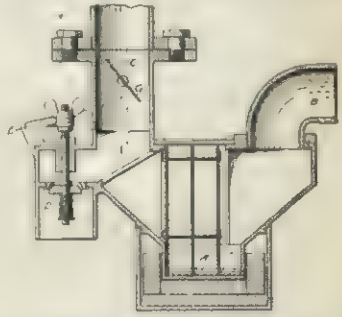


Half-pint and pint sizes of Maple City Mfg. Co.'s Automobile Oilers.

are detachable thus permitting the can to be packed in a small space in the tool kit. The spouts on these cans are made in three sizes, 3 inches and 5 inches on the ½-pt. size and 5 inches and 9 inches on the 1 pt. size. With this oiler it is possible to reach all bearings, as the automatic pump attached to it forces the oil out when a slight pressure is applied to the plunger. The manufacturers claim the cans to be made of first-class material, with high-grade workmanship.

The "Ellerslie" Carburetor

The "Ellerslie" carburetor, manufactured by the Ellerslie Mfg. Co., Rochester, N. Y., is shown herewith in sectional view. The float keeps a specified level of gasoline in the lower part of box in which the wicks A are suspended. These wicks are made of open mesh weave of pure linen, which is very absorbent, and are protected at each end by a wire gauze and fastened to light brass frames. The latter are fastened together by two small bolts at equal intervals, with spacers, and slipped into the box which they fit closely. D is an adjustable auxiliary air valve, opening into the dome or mixing chamber, and is acted upon by throttle through a short lever and arm to give more air at higher speeds. When the carburetor



The "Ellerslie" Carburetor: The gasoline is kept a certain level on foot of wicks A by float; B, intake; C, connectes A to engine; D auxiliary air valve, directly connected with throttle G.

is connected and adjusted, the suction of the engine draws a certain amount of air through the intake B, and upper part of wicks A. On account of the wicks being about double the size of the engine intake, the action results in an easy flow of air through the wicks, thus insuring a very strong, rich, dry gas. The spring shown at the bottom of the air valve D is so placed that it will allow any back fire which may occur to pass out into the open air without effecting the work of the carburetor, and will throw the valve back immediately to its proper adjustment. The carburetor is perfectly protected from dust, each intake being provided with wire gauze. Warmed air may be received into the intake B, by turning the opening of the latter toward the engine, or by connecting the opening to any part of the engine or exhaust.

FARRIER'S HAMMERS.

No. 200

No. 220

Atha Tool Co.

Adze Eye, Octagon Pole.

No. **200.**	Cincinnati Pattern, **10** Ounces.....	.. Per Dozen	$7 75
No. **220.**	Boston Pattern, **12** Ounces	.. "	9 00

No. 253.

No. 152

No. 852.

Maydole's.

Solid Crucible Cast Steel.

No. **253.**	**8** Ounces, Adze Eye, Round Pole	.....Per Dozen	$7 00
No. **152.**	**10** Ounces, Adze Eye, Boston Pattern.....	"	8 00
No. **852.**	**10** Ounces, Adze Eye, Whaleback Claw, Oil Finish, Octagon ...	"	8 00

Weights Do Not Include Handles

FARRIER'S DRIVING HAMMERS.

Heller's, with Handle, Ounces.....	**13**	**15**	**17**
Per Dozen	$12 00	12 00	12 00

All Above, Half Dozen in a Box.

ENGINEERS' HAMMERS.

Atha.

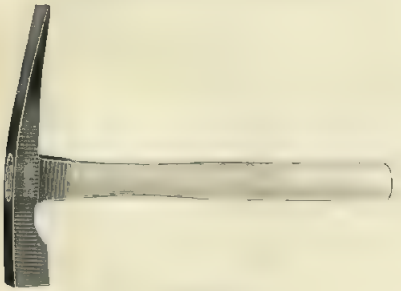
Solid Cast Steel, Polished.

Numbers	0	1	2	3
Weight	1 lb 2 oz	1 lb 10 oz	2 lbs	2 lbs 8 oz
Per Dozen	$12 00	13 00	14 00	15 00

Numbers	4	5	6
Weight	3 lbs	3 lbs 8 oz	4 lbs 8 oz
Per Dozen	$16 00	17 00	19 00

Half Dozen in a Box

BRICKLAYER'S HAMMERS.



Maydole's.

Adze Eye, Oil Finish.

No. **562.** Weight, 1 Pound, 14 Ounce ..... Per Dozen $12 00

One Third Dozen in a Box.

PROSPECTORS HAMMERS.

Maydole's.

Oil Finish.

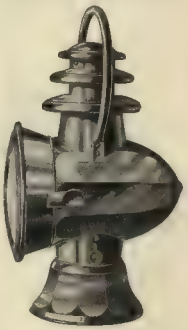
No. **681.** Weight, 2 Pounds. Per Dozen $12 50

No. **682.** Weight, 1¾ Pounds. " 11 50

One Third Dozen in a Box.

Weights Do Not Include Handles.

Lamps and Generators

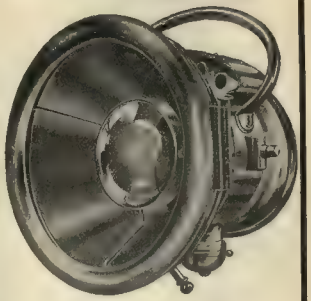


Model No. 31. Very Latest Design. Pat. applied for.

Atwood Generators surpass anything ever heretofore placed upon the market. Simple and effectual. Every obstacle has been overcome. They have **no equal at any price.** Money back if not perfectly satisfactory. Pat. applied for. The famous Atwood Generator.

Atwood Manufacturing Company

Amesbury, Massachusetts



Parabola Headlight

ATWOOD LAMPS are the highest grade Lamps made. Styles are the latest and richest. Get our catalogue showing full line Gas Head Lights, Generators, Oil Side Lights and Tail Lamps. See our exhibit space No. 91 Madison Square Garden. New York Show.

AUTO GOGGLES

No. 1.—A close-fitting comfortable goggle, made of soft mocha leather, fitted with adjustable elastic band. Aluminum ventilated eye cups.

Price, per pair **$3.00**

No. 2. Frame, leather with funnel shaped aluminum cups attached to hold the lenses, lined with gray chamois. Binding, grey velvet and chenille, very large lenses. Goggles are held to the eyes by an adjustable elastic band. No hinges.

Price, per pair **$2.00**

No. 3. Nickeled frame, rigid, grey silk face protector; large carved smoked lenses, rubber covered bows.

Price, per pair **$1.80**

No. 4. Same as Goggle No. 1, but made up from cheaper material, and with unfinished leather edges. This is the best low priced eye protector on the market.

Price, per pair **$1.00**

No. 5. New Style Collapsible

Tan silk frame with collapsible eyeshields, made of silk stockinette which fits perfectly around the eyes, and excludes all wind and dust. Extra large lenses give a large field of vision. The most comfortable goggle made. Furnished in a strong fibre pocket case.

Price, per pair **$3.00**

No. 6.—"Easy fit."

Strong folding metal frame with tan leather mask lined with silk. Four flat glasses provide good front and side vision. Adjustable elastic band. A very desirable style as it may easily be folded and carried in a small space. Each pair is furnished in a fibre pocket case.

Price, per pair **$2.50**

No. 7.—"La Modern"

This goggle with pear shaped glasses is one of the latest models produced and is certain to be a favorite on account of the unobstructed vision attained.

Price, per pair **$4.00**

See Terms page 3, and Discount sheet next back cover.

Voltmeter with Switch

This combined instrument will be found very convenient.

Price .. .. $15.00 each

Auto Clocks

No. 1—8-day Auto Clock.

This is one of the best Auto-clocks ever brought out. It is handsome in appearance, and is an accurate timekeeper. Fastens to the dash with three substantial screws.

Bevelled glass. Porcelain dial, finished in polished brass

Winds regulates and sets from outside.

Price .. .. $11.00 each

No. 2—1 day Auto Clock.

The No. 2 is a much smaller clock than No. 1. It is very suitable for small touring cars or runabouts.

Winds and sets from outside.

A good reliable clock at a low price.

Price .. .. $5.00 each

Foot Bellows for Horns

Will outwear 1 doz bulbs and add more volume to the tone of your horn Foot bellows are becoming very popular. Made with a taper thread, so it will fill any tube.

Price .. .. $3.00 each

See Terms page 3, and Discount sheet next back cover.

GO-CARTS & BABY CARRIAGES

Shipped from Our House

The best make in the United States. Not one of the shoddy lines built chiefly for show, but one that is **honest throughout.** Even the cheapest numbers are worth selling and worth using. We have the cream of the 1906 styles, shipped from our houses. We carry in stock and can ship immediately vehicles upholstered in the two popular colors—green and blue. We can supply other colors with slight delay. Parasols will always match upholstering unless otherwise specified. Average weight of each size is given.

FOLDING RECLINING GO-CARTS.

Shipped from Our House

P1803. Full reed body and gear. Frames braided with natural splash. Reed back. Natural arm rests. Polished maple handle grips to match. Rubber tired wheels, green gear. Upholstered in green or blue denim. Each $2.00

P807. Reed body, cane seat and back, 16 in. wide, 12 in. rubber tire wheels. Upholstered in green or red corduroy, and has storm shield. Parasol of matching color. Each $6.40

P808. Full Worsted finish reed body gear, cane seat and back, rubber tire wheels, upholstered in corduroy to match. Parasol of matching color. Each $8.50

P806. Fine reed body with reed roll top. Cane seat, cane back and rubber tired wheels. Each $4.65

P825. Full reed body, very deep, 38 inches long, upholstered in American denim, dark blue or green, 16 in. rubber tired wheels. Upholstered in American denim, dark blue or green, parasol to match. Each $8.25

P824. Reed body, cane seat and back, 16 in. rubber tire wheels. Upholstered in American denim, dark blue or green, parasol to match. Each $10.25

P829. Reed body with top fender. Cane seat and lining back, 16 in. rubber cushion tire wheels. Upholstered in novelty damask silk plush top and corduroy, parasol to match. Each $13.25

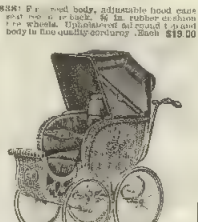
P830. Swan shaped reed body, cane seat, reed lining back, 16 in. rubber tire wheels. Upholstered in fine quality corduroy, parasol of silk satin, ruffled edge. Each $15.95

When a drummer from a big house of standing tells you he has something special in goods and prices, do you not "look him over"? We ask a like courtesy—no more.

P831. Extra fine cane seat reclining back, full rubber cushion tire wheels, upholstered in fine quality corduroy, parasol to match, full sweep rubber cover. Each $18.90

HOOD TOP RECLINING GO-CARTS.

P838. Full reed body, adjustable hood cane seat reclining back, 16 in. rubber cushion tire wheels. Upholstered throughout in fine quality corduroy. Each $19.00



P839. Close woven reed body imitation leather upholstered cane seat and back. Upholstered in fine quality corduroy. Each $21.75

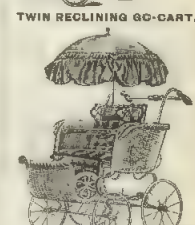
FOLDING SLEEPER GO-CARTS.

The following are ¼ size of regular sleepers but have plenty of room for child to sleep in comfortably. When folded entire foot comes within wheel base.

P815. Upholstered in fine quality corduroy, back reclining, parasol to match. Each $10.50

P816. Reed body, cane seat, reed sides, cane back, reclining back, 16 in. rubber cushion tire wheels. Upholstered in fine quality corduroy, parasol to match. Each $12.25

TWIN RECLINING GO-CART.

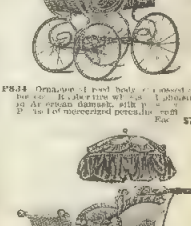


P840. Reed body cane seat and reclining back and dark rubber tire wheels. Upholstered in American damask. Parasol of matching material, flounced ruffles. Each $12.75

BABY CARRIAGES.

P834. Reed body, embossed cane bottom, 16 and 18 in. rubber tire wheels, nickel plated steel gear, patent wheel fasteners. Upholstered in natural denim. Storm parasol, scalloped edge. Each $4.60

P844. Ornamental reed body, cane seat and back, rubber tire wheels, upholstered in American damask, silk plush top. Parasol to match of mercerized percaline. Each $7.50



P836. Open reed body, cane bottom, 8 in. rubber cushion wheels, upholstered in fancy figured velour. Parasol of matching material to match. Each $11.75

FULL SIZE RECLINING GO-CARTS OR SLEEPERS.

All but P818 and P810 have steel side arms. Enameled in dark green. Each with 3 turned polished maple wood hand grips. Dark green cotton [illegible]

P818. Fine reed body, cane seat, reed back, reclining back, 16 and 18 in. rubber tires, upholstered in dark green corduroy, parasol to match. Each $4.65

P819. All Reed body, cane seat and back, reclining back, upholstered in fine quality corduroy, parasol to match. Each $5.95

REVOLVERS.

"HARRINGTON & RICHARDSON'S" AUTOMATIC.

Double action.

3¼, 4, 5 and 6 inch barrels

Finished in nickel or blued; rubber or pearl handles

32 caliber, 6 shot. Weight, 16 oz

Price.. .. .. .

REVOLVERS AND PISTOLS.

"BABY" HAMMERLESS REVOLVER.

Cut two-third size

Highly polished, nickel plated or blue gun finished, rifled. Rubber or pearl stocked. All steel interchangeable parts. 22 and 32 caliber. 6 shot. American made. Weight, 4½ oz

Price.. .. .. $.....

NEW "BABY" AUTOMATIC HAMMERLESS REVOLVER.

Cut one-half size

Highly polished, nickel plated or blue gun finished, rifled. Rubber or pearl stocked. All steel interchangeable parts. 22 caliber. 6 shot. American made. Weight, 6 oz

Suitable for vest pocket and holiday presents

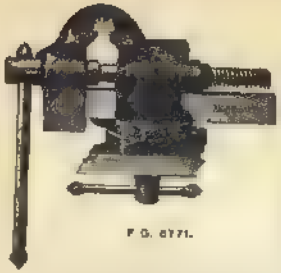
Price.. .. .. $.

"STEVENS' " No. 41—"TIP-UP" PISTOLS.

Round barrel; octagon breech; blued, 3½ inches in length. Nickel plated frame, single trigger; plain walnut grip stock, nicely finished; 22 caliber Short R. F.; open sight. Weight, 7 oz.

Price.. .. ..

WROUGHT BAR PARALLEL SWIVEL VISES.



F G. 6771.

DESCRIPTION, FIG. 6771.

The jaws being extra heavy cannot be broken with a hand hammer, making it an excellent chipping Vise. They are fitted with carefully tempered tool steel pieces, which can be easily replaced should they become worn or injured. The wrought bar is machined perfectly square and parallel and is well fitted into the pocket in the back jaw. For straightening rods, etc., the anvil at the back will be found very useful.

PRICES, FIG. 6771.

Width of jaw, inches	4	5	6½	8
Opens, inches	6	9	10	13
Weight, lbs.	30	64	141	328
Size of wrought bar inches	1⅛ x 2 ⅜	1½ x 2¼	1⅝ x 2⅞	2⅛ x 3
Diameter screw, inches	1⅝	1⅝	1⅝	1⅞
Each	$11 00	$15.00	$17 00	$32 00

OFFSET JAW SWIVEL VISES.

F G. 6772

PRICES, FIG. 6772

Width jaw inches	4	5	6½	8
Jaw opens, inches	6	9	10	12
Weight, lbs.	53	80	165	285
Each	$11 00	$15 00	$17 00	$32 00

DESCRIPTION, FIG. 6773

Front jaw or bar of malleable iron. Specially adapted for drill press work and equally good for special or regular bench work

PRICES, FIG. 6773.

Left hand, No.	73	75	
Right hand, No.	73	76	78
Width jaw inches	5	4½	6
Opens, inches	3	7	9
Weight, lbs.	8	84	170
Each	$4 80	$13 50	$20 00

When ordering, specify right or left hand offset.

OFFSET JAW VISES.

RIGHT OR LEFT HAND.
SWIVEL BASE

FIG. 6772. RIGHT HAND.

BARRETT OFFSET JAW VISES.

F G. 6774, SIDE VIEW.

DESCRIPTION, F G. 6774.

The cut shows an improved swivel bottom and side brace to our vise which makes it strong and rigid when strain is put to Vise

PRICES, FIG 6774.

No.	84	85	86
Width jaw inches	5	6½	7¼
Jaw offsets inches	3¾	4¼	5
Jaws open, inches	7	7⅛	10½
Each	$29 00	$33 00	$45 00

REED MACHINISTS' VISES.

STATIONARY BASE PARALLEL JAW VISES.

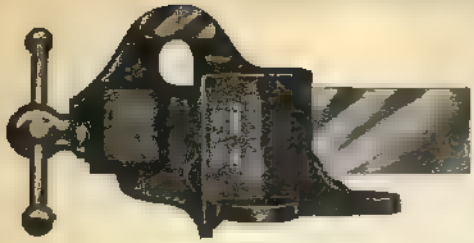


FIG. 6775.

Built for heavy shop as well as light tool room work

PRICES, FIG. 6775

No.	Width Jaw Inches.	Opens Inches.	Weight Lbs.	Each
1[illegible]	3	4	21	$5 00
1[illegible]½	3½	5	28	7 00
1[illegible]	4	6	36	8 50
1[illegible]½	4½	8	51	11 00
1[illegible]	5	7½	70	15 00
1[illegible]	6	10	128	25 00

REED MACHINISTS' VISES.

SWIVEL BASE PARALLEL JAW VISES.

PRICES FIG. 6776

No.	Width Jaw, Inches.	Opens Inches.	Weight Lbs.	Each
203	3	4	38	$7 50
203½	3½	5	50	9 75
204	4	6	90	10 50
204½	4½	6½	87	12 50
205	5	7½	90	16 50
206	6	10	145	30 50

FIG. 6776

FIG. 6777.

REED EXTRA HEAVY VISES.

Meets the requirements for a chipping vise for extra heavy work. The steel facings are milled to size

PRICES. FIG. 6777

Weight, lbs.	282
Width of jaws, inches	8½
Opens, inches	12
Each	$60 00
Extra jaw facings, each	6 50
Extra jaw facings, per set	13 00

HEAVY CHIPPING VISES.

DESCRIPTION, FIG. 6778.

This is a very large and heavy Vise, and possesses all the requisites to meet the heavy demands made upon a vise of this class in railroad and machine shops, foundries, glass works, mills and large manufactories

PRICE, FIG. 6778.

No.	68
Width of jaws, inches	8½
Opens, inches	12
Weight, lbs	275
Each	$50 00

Swivel bottom attachment for this Vise $5 00

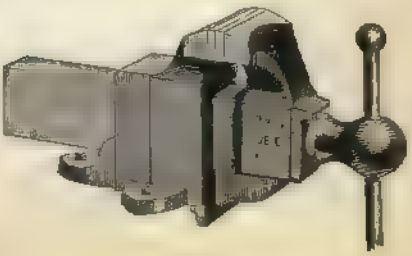


FIG. 6778

THE FAIRBANKS COMPANY

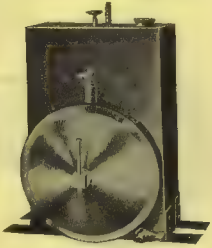
MOTOR SUPPLIES OF ALL KINDS

All Leading Lines Carried in Stock

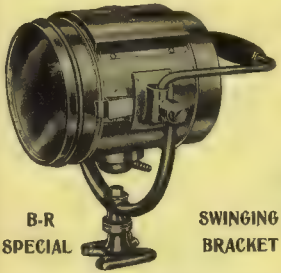
B-R SWINGING SEARCHLIGHT

Thoroughly well made from heavy brass. Handsomely finished. B. and L. Mirror Lens. All sizes.

B-R PARABOLE HEADLIGHT
Strictly high-grade goods. Very handsome. Medium grades in similar shape. Prices right.



E and J GENERATOR
Carbide chamber removable. Very carefully made, attractive in detail, and highly finished. Same old principle—a proved success. Single or double. Price each, $10.00



B-R SPECIAL SWINGING BRACKET

Converts ordinary searchlight into swinging type. Fits 6 or 7 inch lamp. Made from hard brass. Brass finished.

With lamp handle price each, $5.00

B-R AMPERE METER
Register quickly and accurately. Guaranteed. Price each, $8.00.

B-R VOLT-METER
Same style and size. Price each, $8.00

THE BECKLEY-RALSTON CO.

74, 76 and 78 Michigan Ave., Chicago

BENCH PLATES.

IMPROVED BENCH PLATE, POLISHED.

FIG. 9010.

DESCRIPTION, FIG. 9010.

This new and improved bench plate is so made that it can be readily inserted in any bench for vise use, and provides no loose holes where tools may be used in the usual position.

PRICES FIG. 9010.

No. 3, 9 x 9 inches, weight 15 lbs., each $3 50
Bolt and handle for No. 3, each 1 00

CAST IRON BENCH PLATE, POLISHED.

FIG. 9019.

PRICES, FIG. 9019.

No.	0	1	2
Size, inches	6½ x 12	8½ x 8	8½ x 8
Weight, lbs.	24	36	37
Each	$2 00	$2 50	$3 00

TINSMITHS' HAMMERS.

HANDLED.

PRICES, FIG. 9020.

No. 0, for heavy work, bright, 1½ inch; weight 24 lbs. each	$2 30
No. 1, for sheet iron, bright, 1¼ inch; weight, 20 lbs. each	1 85
No. 2, for tin, etc., bright, 1 inch; weight 18 oz. each	70
No. 3, for tin, etc., bright, ⅞ inch; weight 14 oz., each	67
No. 4, for tin, etc., bright, ¾ inch; weight, 10 oz., each	45
No. 5, for tin, etc., bright, ⅝ inch; weight 8 oz., each	40

RIVETING HAMMERS.

FIG. 9022.

PRICES, FIG. 9022.

No.	1	2	3	4	5
Size, inches	1¼	1	⅞	¾	⅝
Weight, oz., each	24	18	14	10	8
Bright, each	$0 93	$0 90	$0 87	$0 45	$0 40

SETTING HAMMERS.

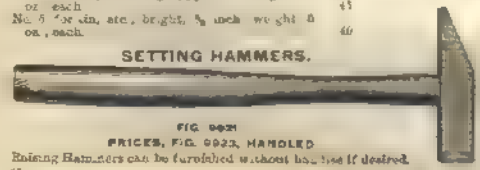


FIG. 9021.

PRICES, FIG. 9023, HANDLED.

Raising Hammers can be furnished without handles if desired.

No.	1	2	3	4
Weight, lbs.	1	1½	¾	½
Each	$2 35	$1 85	$1 05	$0 85

Hammers, extra, per dozen $1 25.

RAISING HAMMERS.

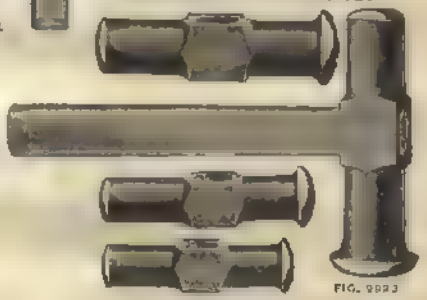


FIG. 9023.

RIVET SETS AND HEADERS.

TINNERS' CAST STEEL RIVET SET GUN METAL FINISH

FIG. 9022.

FULL SIZE OF HOLES.

No.	00	0	1	2	3
For iron rivets, No.	14	10 & 12	8	6	4 & 5
For copper rivets, No.	8	9	6	7	8
No.	4	5	6	7	8
For iron rivets, No.	2 & 3	1¼ & 2	1½	1¼	10 & 12 oz.
For copper rivets, No.	9	10, 11	12	13	14

PRICES FIG. 9022.

No.	00 & 0	1 & 2	3 & 4	5 & 6	7 & 8
Each	$0 55	$0 60	$0 50	$0 47	$0 39

Ornament sets, per set $0 25

EXTRA CAST STEEL RIVET SET.

JAPANNED, HALF POLISHED.

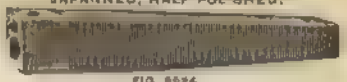


FIG. 9024.

These goods are precisely the same as those shown in Fig. 9022, except in quality and finish.

PRICES, F. G. 9024.

cast steel extra

No.	00 and 0	1 and 2	3 and 4	5 and 6	7 and 8
Each	$0 75	$0 65	$0 55	$0 47	$0 39

STOW'S IMPROVED SHEAR HOLDER.

DESCRIPTION, FIG. 9926.

The advantages of this Shear Holder are at once apparent. The stake, clamp, and wrench are always attached; the tinner can use it anywhere on his bench in any part of his shop, and it will hold the bits firmly at any angle desired.

PRICE, FIG. 9926.

No. 5 improved shear holder, with clamp, weight, 15 lbs., each $6.00

FIG. 9926.

TINNERS' STAKES.

WROUGHT IRON WITH STEEL FACES.

BEAKHORN STAKE.

PRICES, FIG. 9925.

No.	Each
1, weight, 45 lbs.	$15 00
2, weight, 40 lbs.	13 35
4, weight, 20 lbs.	10,00

FIG. 9925.

SQUARE STAKE.

FIG. 9928.

CREASING STAKE

FIG. 9927.

PRICE, FIG. 9927.

14½ inches long, weight 12½ lbs. each ... $8 00

PRICES, FIG. 9928.

Cross-section size 6½ x 1¾ in., wt. 11 lbs., each $8 [illegible]

Large square, face 6½ x 6½, solid, wt. 14 lbs., each 11 [illegible]

Small square face 4½ x 4½ inches, wt. 5 lbs., each 3 50

DOUBLE SEAMING STAKE.

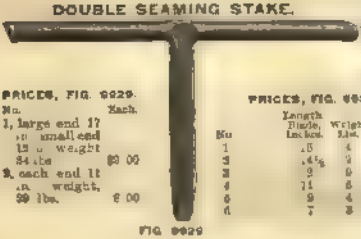


FIG. 9929.

PRICES, FIG. 9929.

No.	Each.
1, large end 17 in. small end 13 in. weight 84 lbs.	$9 00
2, each end 11 in. weight, 30 lbs.	6 00

HATCHET STAKE.

F. G. 9930.

PRICES, FIG. 9930.

No.	Length Handle, Inches.	Weight, Lbs.	Each
1	15	4	$3 [illegible]
2	14½	3	4 [illegible]
3	13	2	3 [illegible]
4	11	1½	2 [illegible]
5	9	1	2 35
6	7	¾	1 75

CREASING STAKE. WITH HORN

FIG. 9931.

PRICE, FIG. 9931.

Round end 2½ inches, flat end 6½ inches, weight 11½ lbs. each [illegible]

CAST IRON STAKES, WITH POLISHED FACES.

MANDREL STAKE.

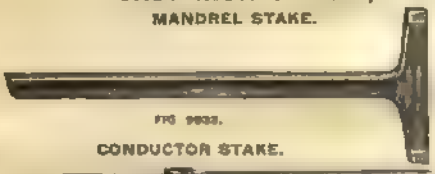


FIG. 9933.

CONDUCTOR STAKE.

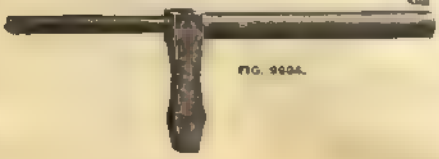
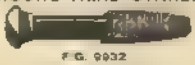


FIG. 9934.

ROUND HEAD STAKE.



F.G. 9932.

PRICE, FIG. 9932.

Weight, 11 lbs., each ... $1 35

PRICES, FIG. 9933.

No.	Length to the Standard, Feet.	Inches.	Weight, Lbs.	Each.
00	5	[illegible]	125	$10 00
0	6	6	87	8 00
1	5	10	66	5 00
2	6	6	57	4 00
3	6	3	51	3 00

PRICES, FIG. 9934.

No.	Each.
1 Turned, large end 15 inches, small end 11½ [illegible] weight 35 lbs.	$4 00
2 [illegible] small end 9 [illegible] weight 25 lbs.	3 00

BLACKSMITHS' TONGS.

CURVED LIP, FLUTED JAW

FIG. 7217.

PRICES, FIG. 7217.

No.	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349
Length, inches	12	14	16	18	20	22	24	26	28	30
Per dozen	$5 50	$7 00	$8 50	$9 50	$10 50	$ [illegible]	$13 50	$ [illegible]	$ [illegible]	$19 50

STRAIGHT LIPPED

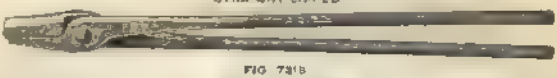


FIG. 7218.

PRICES, FIG. 7218.

No.	[illegible]	[illegible]	1353	1354	[illegible]	[illegible]	1357	[illegible]	[illegible]
Length, inches	12	14	16	18	20	22	24	26	28	30
Per dozen	$6 [illegible]	$6 75	$ [illegible]	$8 75	$9 [illegible]	$ [illegible]	$ [illegible]	$14 00	$ [illegible]	$ [illegible]

SINGLE PICK UP.

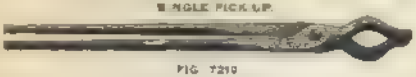


FIG. 7219.

No. 2094, per lb. $0.40

SCOTT

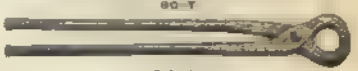


FIG. 7220.

No. 2094, per lb. $0.40

DOUBLE PICK UP.

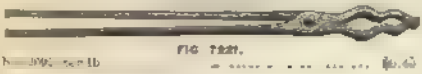


FIG. 7221.

No. 2095, per lb. $0.45

ROUND JAW OR BAND.

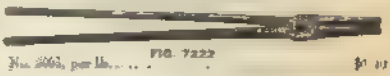


FIG. 7222.

No. 2003, per lb. $0.40

RIVET.

F G. 7223.

No. 2096, per lb. $0.50

LATHE TOOL.

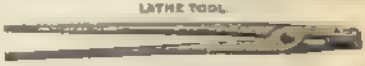


FIG. 7224.

No. 2096, per lb. $0.60

PICK

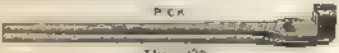


FIG. 7225.

No. 2 98 per lb. $0.60

ANGLE JAW

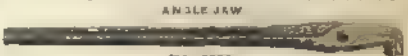


FIG. 7226.

No. 2 98 per lb. $0.60

BAND OR CLEVIS.

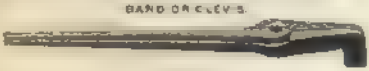


FIG. 7227.

No. 2099, per lb. $0.60

CLIP

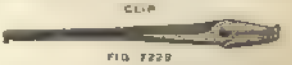
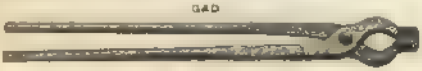


FIG. 7229.

No. 2099½, per lb. $0.60

GAD



F G. 7229.

No. 2100, per lb. $0.40

HORSESHOERS' TONGS

FIG. 7230.

No.	13	14	15
Length, inches	10	12	14
Per dozen	$4 75	$5 75	$6 75

CHAIN TONGS.

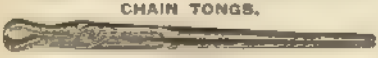


FIG. 7231.

No. 2500, per lb. $0.50

STEEL FORGING TONGS.

F G. 7232.

PRICES, FIG. 7232.

From 18 to 18 inches.

No. 31, heavy, per dozen	$6 00
No. 46, medium, per dozen	5 00
No. 33, light, per dozen	4 00

FIRE SET.

SHOVEL, POKER AND SCRAPER

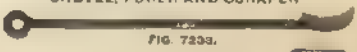
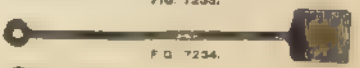


FIG. 7233.



F G. 7234.

F G. 7235.

PRICE, FIGS. 7233 TO 7235.

No. 2750, weight 5 lbs., per set. $3.00

MILL PICKS AND HAMMERS.

FACING HAMMER.

FIG. 7235.

FURROW HAMMER.

FIG. 7237.

FACING OR CRACKING PICK WITHOUT EYE.

FIG. 7236.

FURROWING OR EYE PICK.

FIG. 7239.

POINTED MILL PICK.

FIG. 7240.

PATENT SOCKET MILL PICK HANDLE.

FOR USE WITH PICKS WITHOUT EYES.

FIG. 7241.

PRICES, FIGS. 7236 TO 7241.

New mill picks, per lb.	$0.75
Dressing old picks, each	.80
Dressing furrow or facing hammers, each	1.50
Pick handles, patent socket, each	1.50

All orders for picks weighing less than 5 pounds each will be charged at the rate of $3.00 per dozen.

FURROW AND FACING HAMMERS.

3 lbs. or under, each	$3.50
3¼ or 4 lbs. each	4.00

SPLICING OLD PICKS.

Eye picks, per weld	$1.00
Cracking, each	$0.75 to 1.00

The prices for welding do not include dressing.

All these Picks and Hammers are made from hard tempered steel.

In ordering give weight of Pick or Hammer, and whether wanted with or without eyes.

WASHERS.

Snowewhite.

This is a particularly well constructed machine and has a specially large tub made from Louisiana Red Cypress, the best wood known for this purpose. The inner side and bottom are deeply corrugated, thereby increasing the agitation of the water and creating a greater amount of soap suds. The hinges are made from extra heavy steel plate, as is also the hasp. The dasher paddle is cast iron heavily metallic galvanized. The gearing is simple in construction, strong and durable, has roller bearings and will run forward or backward with perfect ease. The hood, which completely covers the gearing, is stamped from one piece of sheet steel, is hinged to the frame permitting it to tilt back, exposing the gearing to view. This machine is finished in the natural color of the wood; the hoops are copper bronzed, while the hood, fly-wheel, gearing and other castings are aluminum bronzed.

Snowewhite ..... Each $10 00

Flyer.

Tub and Finish same as Snowewhite.

The "Flyer Lever Rotary Washer" embodies all the best features of the latest and most modern machine for the quick and thorough washing of clothes.

As will be observed from the illustration, this machine in addition to being equipped with a strong and simple mechanism for producing the reciprocating action of the dasher or stirrer block, is provided with a large and well balanced fly wheel.

Flyer ..... Each $16 50

BRASS KEY CHECKS.

Full Size Cuts.

No. 03925.

No. 2.

No. 03907

No. 03925. **350** in a Pound . . . . . Per Pound $2 50
No. 2. **120** in a Pound . . . . . " 2 00
No. 03907. **89** in a Pound . . . . . " 2 00

No. 3905

No. 9.

No 03921

No. 03905. **109** in a Pound . . . . . Per Pound $2 00
No. 9. **118** in a Pound . . . . . " 2 00
No. 03921. **63** in a Pound . . . . . " 2 00

No. 03917

No. 03926.

No. 03917. **36** in a Pound . . . . . Per Pound $2 00
No. 03926. **30** in a Pound . . . . . " 2 00

A Buckeye

BUCKEYE JACKS

are the highest grade possible. None ever broke down under the load it was required to lift. The **Best Automobiles** in this country are equipped with **"Buckeyes."** The **Best Jobbers** and **Dealers** recommend them and **every user of Buckeye Jacks is a satisfied user.** Made only by

THE BUCKEYE JACK MFG. CO., Louisville, Ohio

Breeze Automatic Carburetors

1906 MODEL

For all size engines from Motor Cycle to 200 horse-power Motor Boat.

GET PAMPHLET C

Breeze Motor Mfg. Co.
Newark, N. J.

Strength, Safety, Simplicity

In the

Springfield Jack and Tire Tool. Price, $2.50

For any car weighing from 800 to 4000 pounds
For removing any Clincher Tire from 2¾ to 4¼ inches.

Price, $4 50 Sold by all dealers.

REST YOUR TIRES
with a "SPRINGFIELD" LIFT
You turn the cranks and the four wheels will rise 7 inches off the floor

Price, $10 00

Showing lift in position to receive car. Actual lifting capacity 2500 pounds. Write for descriptive circular and price.

THE SHAWVER CO.
Springfield, Ohio.

Nos. 15 and 21

Peerless Automobile Jacks

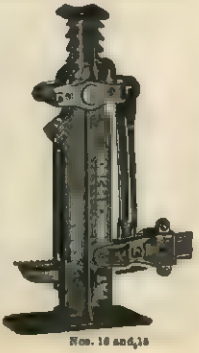
U. S. and Foreign Patents Granted

A model of simplicity, durability and strength. Raise by working handle below center; lower by working handle above center. Works at any angle. Can not slip or drop.

Most Popular Auto Jack on the Market

	Height	Rise	Weight	Price
No. 15—For vehicles of 2 tons.	10-in.,	7-in.,	4-lbs.	$2.50
No. 19—For vehicles of 2 tons.	11-in.,	6-in.,	7-lbs.	3.00
No. 18—For vehicles of 3 tons.	13-in.,	8-in.,	9-lbs.	4.00
No. 21—For vehicles of 10 tons.	13¾-in.,	7-in.,	21-lbs.	6.00

OLIVER MANUFACTURING CO.,
202 S. Desplaines Street, Chicago, Illinois
JOHN SHAW & SONS, Wolverhampton Ltd., Wolverhampton, England, British Agents.


Nos. 18 and 18

Of course you know that the speed of your car depends upon the spark; but do you know that

WILLIAMS' COILS

furnish a much quicker, hotter spark than others?

Try them, and be convinced. Our catalog will tell you all about our various styles.

E. Q. WILLIAMS,

539 S. Clinton St., Syracuse, N. Y.

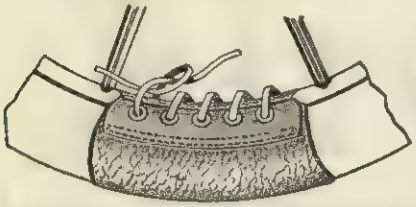
A DOW COIL

will make your car a lot more satisfactory. It furnishes a good, hot spark, which does the work instantly. It is the best coil in use today.

DOW PORTABLE ELECTRIC CO.,

BRAINTREE, MASS.

The Mesinger Tire Repair Band Made of Mineral Chrome Tanned Leather



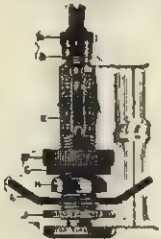
Size 2½, price 75 c.; size 3, price 90c.; size 3½, price $1.00; size 4, price $1.20; size 4½, price $1.40; size 5, price $1 60. Sold by all leading jobbers.

Mesinger Motor Saddles and Bicycle Saddles are Standard

Model A A—Free action in front suspension spring enables the rider to proceed at high speed over all obstructions.

H. & F. MESINGER MFG. CO., 1803-5 First Avenue, New York

Schrader Universal Valves



[Half size]

Trade-mark Registered April 30, 1895.

Simple and Absolutely Air Tight

Schrader Motor Tire Valves as shown in cut, are the regular equipment for G & J style Motor Tires, Hartford Dunlop Motor Tires Fisk Detachable Motor Tires and New Goodyear Detachable Motor Tires. Our No. 777 Motor Tire Valve is the standard for 2¼" and 3" tires, and our No. 725 Motor Tire Valve is the standard for tires larger than 3."

Schrader Universal Valves as shown in cut, and in different modifications are used on all Bicycle tires made in this country.

These Valves are supplied to the Trade by all Tire Manufacturers.

Valve Parts can be obtained from the Tire Makers or from the Manufacturer.

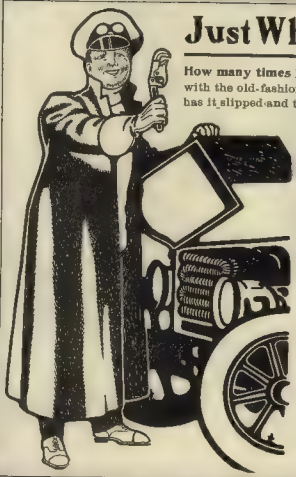
[Full size]

A. SCHRADER'S SON, Inc., 26-30-32 ROSE ST., NEW YORK CITY

Here it is!

BULLARD AUTOMATIC WRENCH

Specially adapted to Automobile use.



Just What You Want

How many times have you skinned your knuckles with the old-fashioned wrench? How many times has it slipped and taken the corner off a nut. How often has it gone cranky and refused to come off when you wanted it to? **No wonder you said things.** Wouldn't you like to have a wrench that won't slip and never balks? One that you can slip onto anything, anywhere, without adjusting it? **Buy a Bullard.** It's automatic, self adjusting. Works in a limited space, because there's no lost motion. Never cramps. Greatest power, longest wear. Made in 5 sizes, up to 3 inches capacity.

TO THE TRADE

We are in position to quote liberal discounts on your next year's requirements

The Bullard Automatic Wrench Co.

PROVIDENCE Incorporated RHODE ISLAND

Automobile Art Dept.

BULL DOG WRENCHES.

NO. 0.

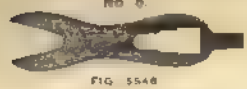


FIG. 5548.

PRICES FIG. 5548.

[illegible] pocket [illegible] inches long [illegible] pipe [illegible]

NO. 1.

FIG. 5549.

PRICES FIG. 5549.

No. 1 [illegible] inches long [illegible] pipe [illegible] to ⅝ inch [illegible] $1 00

NO. 2.

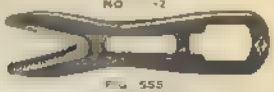


FIG. 555

PRICES FIG. 5550.

No. 1½ inches long [illegible] pipe ½ to ⅝ inch, holds [illegible] $5 00

No. [illegible] holds round [illegible] 1¼ inches per dozen 8 00

NO. 3.

FIG. 5550.

PRICES FIG. 5550.

No.	Length Inches.	Size of Pipe Inches.	About Size of Nut Inches.	Per Dozen
2	6	[illegible]	[illegible]	$ [illegible]
3	8	[illegible]	[illegible]	[illegible]
4	25	[illegible]	[illegible]	36 00
4½	36	1¼ to 2½	1⅜ to 3	45 00
5	37	2 to 3	2¾ to 3½	54 00

TWIN

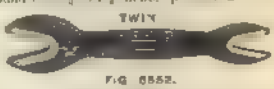


FIG. 5552.

PRICES FIG. 5552.

0 inches [illegible] ½ to ⅝ inch, heads round [illegible] $ 8 00

[illegible]

W. & B. COMBINATION WRENCHES.

MADE OF CRUCIBLE STEEL, BRIGHT FINISH.

FIG. 5553

DESCRIPTION, FIG. 5553.

[illegible] adapted to a wide range of work. Material, work[illegible] and finish are of the very best

PRICES, FIG. 5553.

No.	Adjustment Limits, width of Slot, Outside This Setting.	Per Dozen
[illegible]	[illegible]	$ [illegible]
10	¼ to 1¼	28 00
15	⅜ to 2½	40 50

ALLIGATOR WRENCHES.

BOYNTON ADJUSTABLE

FIG. 5554

DESCRIPTION FIG. 5554.

It is a quick [illegible] and is made for [illegible] and [illegible] adapted to a wide range of work. [illegible] strong and durable. It is light, and each part can be read by and accurately duplicated at a proportionate cost of he[illegible] wrench.

PRICES, FIG. 5554.

No.	Size, Inches.	Each
[illegible]	½ to ¾	$1 [illegible]
18	¾ to 1	2 50
18½	¾ to 1¼	3 00

ELGIN ADJUSTABLE WRENCHES.

RETHREADING ATTACHMENT

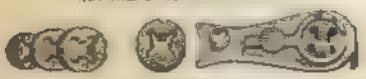


FIG. 5556

Rethreading attachment with interchangeable dies, for Elgin Wrenches. It is a ratchet tap attachment and will rethread damaged bolts in corners and angles without removing the bolt from its position to a vise. Extra dies can be had in [illegible] and [illegible]

PRICES, FIG. 5556.

Attachment, with one die, per doz	$12 [illegible]
Extra dies, per dozen	6 [illegible]

WRENCH

FIG. 5558

The [illegible] is 7 inches long, fully nickel plated. De[illegible] gineers, machinists, [illegible] tricians and machinists

PRICES FIG. 5558.

Per dozen [illegible]	$ [illegible] 00
Extra jaws [illegible] dozen	3 00

THE FAIRBANKS COMPANY

COMMON TONGS.

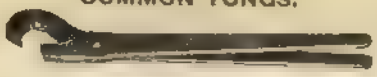


FIG 5540

PRICES, FIG. 5540.

Size, inches	½	¾	1	1¼	1½	2	2½
Each	$0.60	$0.70	$0.75	$0.90	$1.10	$1.50	$2.00

Size, inches	3	3½	4	4½	5
Each	$2.50	$3.00	$3.50	$4.00	$4.50	$5.00

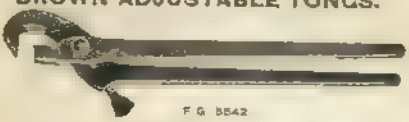
COIL TONGS.

FIG 554

PRICES, FIG. 5541

Size, inches	¾	1	1¼	1½	2	2½
Each	$3.75	$5.00	$5.40	$6.00	$9.75	$4.75

BROWN ADJUSTABLE TONGS.



F G. 5542

PRICES, FIG. 5542

No.	1				0
For pipe, inches	½ to ¾	¾ to 1	1 to 1½	1½ to 2	2 to 3
Each	$0.90	$0.75	$0.85	$1.00	$1.00

No.	4		6	7
For pipe, inches	1½ to 3	3½ to 4	5 to 6	4 to 7
Each	$3.20	$3.00	$10.00	$11.00

JARECKI ADJUSTABLE PIPE TONGS.

F G. 5543.

PRICES, FIG. 5543.

No.	0	1	2
Grips gas burner, inches	¾	¾ to 1	1 to 1½
Each	$3.00	$3.00	$4.00

No.	3	4	5
Grips gas burner, inches	½ to 2½	¾ to 3½	2½ to 6
Each	$5.00	$6.00	$10.00

BARNES SPECIAL TONGS.

WITH REVERSIBLE JAW OR SLIDE, FOR MACHINISTS', PLUMBERS AND GAS FITTERS' USE

DESCRIPTION, FIG 5544

Designed for holding pieces of metal of whatever shape while being [illegible] It is also valuable for removing studs or bolts from engines and other machinery, when from rust or other causes the nuts have [illegible] will turn with these. It will turn or hold bolt heads or [illegible] reversing the jaw it can be used as a wrench. It is readily adjustable to [illegible] ing within its range and its action is instantaneous. [illegible] pipe or pieces of metal firmly. It is not liable to crush or distort [illegible] gas fitters use on small pipe it is powerful and convenient and will [illegible] where ordinary gas pliers fail.

F G. 5544

PRICE, F G. 5544.

No. 1 [illegible] each $ [illegible]

WESTCOTT ADJUSTABLE S PIPE WRENCHES.

F G. 5545.

DESCRIPTION FIG 5545

The Wescott Adjustable S Pipe Wrench is the handiest and most convenient wrench for steam or gas fitters' use and can be used to advantage in a corner or in a contracted space. It releases quickly and has a firm grip.

PRICES, FIG. 5545

No.	00	0	00	0	2
Size	8	9	10	12	14
Takes pipe, inches	¼ to ¾	⅜ to ¾	½ to 1	¾ to 1¼	¾ to 1½
Each	$1.00	$1.35	$1.50	$2.00	$2.50
Per dozen	12.00	15.00	18.00	24.00	30.00

ALWAYS READY WRENCHES.

Manufactured from special steel, forged and tempered in oil.

POLISHED AND NICKEL PLATED.

FIG 5546

PRICES, FIG 5546

No.	1	3	5½	8
Each	5	7	9½	11½
Per dozen	$5.00	$6.75	$10.50	$16.00

BLACK FINISH. POLISHED JAWS

F G. 5547

PRICES, FIG. 5547

No.	1	2	3½	8
Each, inches	5	7	9½	11½
Per dozen	$4.00	$6.50	$10.50	$15.25

Holley Carburetors

are the best in the world, because each one is designed and perfected to meet the special requirements of the car it is to be used on.

Here is our **MODEL "A"** Carburetor for Oldsmobile runabouts. Price with all attachments, $12.00. We made exhaustive tests and experiments with this carburetor on the Oldsmobile until we obtained an increase in horse power of 20 per cent. and a large decrease in fuel consumption. We have sold 4,000 in one year and will continue to sell it until every Oldsmobile on earth is equipped with one.

This cut shows our carburetor for 1905 model Wintons B and C. Price, complete, $18.00. It was designed, made and perfected for these cars ONLY. It would not give satisfaction on an Oldsmobile runabout, but it increases the horse power of the above model Wintons and our customers praise it very highly.

Here is is another carburetor for four cylinder work, designed, manufactured and perfected for the 1905 four-cylinder Autocar, Type XI. Price, complete, $14.00.

MODEL "A" Special Carburetor for Oldsmobile Touring Runabout ("N" Car) and Oldsmobile Single Cylinder Tonneau ("T" Car) fits in place of carburetor at present on cars, no alterations or special fittings necessary. Price, $11.50.

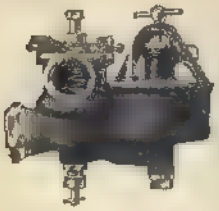
MODEL "A" Special Carburetor for 1901, '02 and '03 Oldsmobile Runabouts. With each carburetor we furnish a rod, peddle, air screen and spring. 4,000 of these sold during 1905. Price, $12.00. Will increase the horse power of any Oldsmobile 20 per cent. and decrease fuel consumption.

MODEL "A" Special Carburetor for all models of Northern runabout, same as Oldsmobile, with exception of flange. No attachments or fittings necessary. Price, $12.00.

HOLLEY BROS. CO. **668 BEAUBIEN ST. DETROIT, MICH.**

REMEMBER THIS

When you buy a HOLLEY CARBURETOR you get a device manufactured for a special purpose, not a make-shift with a flange screwed on here and a lug stuck on there.



MODEL "A" STANDARD Carburetor made with 1", 1¼" and 1½" gasoline outlet (pipe thread). 1" size is also made with a special thread for attaching to 1905 model "C" 10 H. P., double opposed Ford Runabout. We also supply this carburetor with gasoline outlet on opposite side from that shown in cut, with flange connection, holes not drilled. The air inlet of the flange carburetor is a female thread; in each instance being ¼" larger than the gasoline outlet.

Prices, 1", $11.50; 1¼", $11.50; 1½", $11.50.

MODEL "E" Special Carburetor for Franklin Four Cylinder Air Cooled Runabouts 10 H. P., made previous to 1905, no fittings necessary, with the exception of gasoline outlet pipe, as shown in cut.

Price, $12.00

MODEL "E" Special Carburetor for 12 H. P., Franklin 1905 model, no fittings necessary, with the exception of gasoline outlet pipe, as shown in cut. Price, $12.00. Also made with ¾" pipe outlet, for motor cycles.

Price, $11.00.

MODEL "E" Special Carburetor for 1905, Type X Two Cylinder Autocar Runabout. Carburetor as shown, ready to attach.

Price, $14.00.

Special 2" Model "B" Carburetor for models from 5" to 6" bore. Price, $17.00. Gasoline outlet can be shifted in three different positions.

STANDARD MODEL "E" Carburetors furnished as shown, with top or side outlet

For 3½" bore motor, use ¾" outlet Carburetor.

Price, $11.00.

For 3½" to 4" bore motor, use 1" outlet Carburetor.

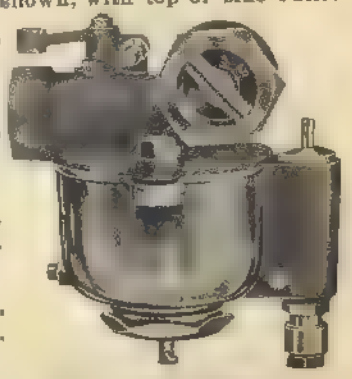
Price, $12.00.

For 4 to 4½" bore motor, use 1¼" outlet Carburetor.

Price, $13.00.

For 4½ to 5" bore motor, use 1½" outlet Carburetor.

Price, $14.00.



HOLLEY BROS. CO.

668 BEAUBIEN ST.
DETROIT, MICH.

Selling Agents:

NEW ENGLAND, The Post & Lester Co., Hartford Conn.
PACIFIC COAST AGENTS, The Geo P. Moore Co. San Francisco and Los Angeles, Cal.
PHILADELPHIA AGENT, W W. Taxis, No. 506 Odd Fellows' Temple.

For Sale at:

New York—Chas. E. Miller 97-101 Reade St. E. J. Willis Co., 8 Park Place. The Motor Car Equipment Co., 55 Warren St.
Cleveland—Chas. E. Miller, 406 Erie St.
Washington, D. C.—National Electric Supply Co., 1330 New York Avenue, N. W.
Chicago—Excelsior Supply Co., 224 Randolph St. The Automobile Supply Co. 1339 Michigan Ave. The Beckley-Ralston Co., 176 Lake St.
St. Louis, Mo.—J. H. Neustadt, 826 18th St.
Buffalo—J. A. Cramer, 787 Main St. The Kelsey Co., 48 Niagara St.
Detroit—Auto Equipment Co., Jefferson Ave.
Denver—Denver Auto Goods Co., 1634 Glenarm St.
Montreal, Can.—Eastern Automobile Co., 5 Berthelet St. Canada Cycle & Motor Co.
Walkerville, Ont., Can.—G. M. McGregor.

The Moline Model "G"

The 1906 Moline line made by Moline Automobile Co., East Moline, Ill., includes their Model G, shown herewith, which was not ready to illustrate when we described technically the 1906 Moline construction in our January, 1906, number, page 89. Model G is offered as a thoroughly substantial general service car and lists at $1000. For $25 a "beetle-back" deck is furnished to replace the tonneau seat when the car is to be used as a touring runabout.

The motor is the popular double cylinder opposed type, 4¾x5 in., located under the body in the middle of the frame. While it is a common criticism of this style of construction that it is inaccessible, the Moline Company claim that those who have tried both the double opposed under the body and the four cylinder vertical in front style, say that the difference in accessibility is so small as to be practically negligible. In constructing the Model "G" motor this company has given particular attention to the idea of accessibility, and this motor can be readily gotten at through floor and seats.

The crank case is cast in two pieces. The upper part is a square box-like casting which carries the main crank shaft bearings, and to which the cylinders are bolted. The main shaft bearings are split at an angle of 45 degrees, and the cap consists of the other half of the boxing, together with a plate which covers an opening in the side of the case, made to admit the cranks. The top of the case is, of course, open, and the customary plate cover is used. This cover is removable by loosening the cap screws which hold it in place without having to take off the oiler or to disconnect any oil or water pipes. The bottom part of the case carries the cam shaft with both bearings and provides a pocket for the cam shaft gear, and slots for the squared push rods for operating the valves. This part is attached to the upper part of the case by a number of cap screws fitted with a neat gasket, so that it is oil tight. The push rods have hardened steel rollers at the inner end, which come in contact with the cams. The cams are attached to the shaft by taper pins, riveted.

Cylinders are cast with water jacket, head and valve chambers integral, with valve chambers on the bottom side and offset on both cylinders, so that valve stems are in line, and two cams operate all four valves.

Cylinder bores are finished by grinding to size, and so are the pistons and rings. Pistons are fitted with four eccentric rings, three of them above the pin, and the other directly over the ends of the pin. Connecting rods are of I-beam section with non-adjustable piston pin bushings. The crank pin end is made adjustable with a cap held in place by two bolts with lock nuts. The crank pin bearings, also the connecting rod bearings are made of nickel babbitt, moulded and turned to size, then split, making them easily adjustable.

Moline Model "G" 4¾x5-inch, double opposed water-cooled gasoline engine of 18 horse power, planetary 2-speed and reverse planetary transmission, jump spark ignition, Hill precision oiler, single chain drive, 30x3-inch tires on front, 30x3½ rear, wheel base 88 in., price $1000 including side oil lamps, horn locks and tire repair outfit, "beetle-back" rear deck furnished for $25 extra to use when tonneau is removed

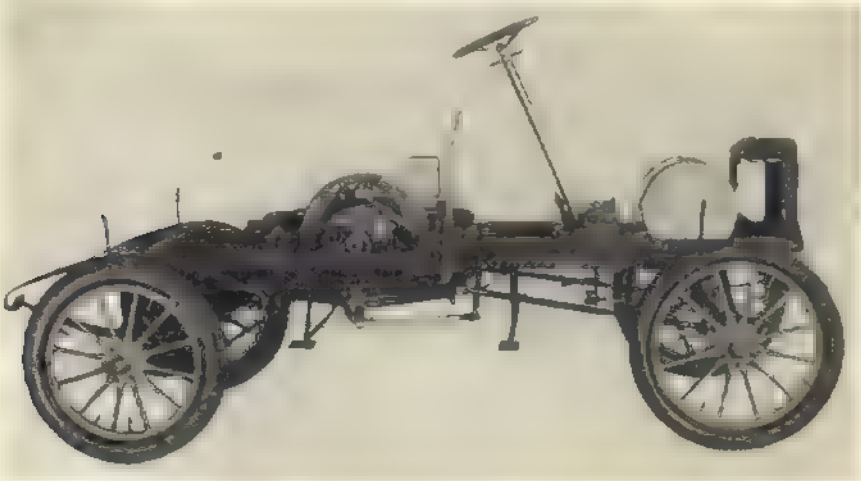
Lubrication of the motor is taken care of by a six-feed Hill Precision Mechanical Oiler, located on a bracket over the front cylinder, and driven by an eccentric on the cam shaft. Two of the feeds are piped to the two cylinders, two more to the main side bearings and the remaining two to the centrifugal oiler rings, which carry the lubricant to the connecting rod bearings. It is a well-known fact that the most difficult problem on a horizontal engine is to satisfactorily oil the connecting rod bearings. Various schemes have been used. The method employed on the 1906 cars is to drop the oil inside a ring attached to the crank shaft, and connected through a system of drilled holes, so that the centrifugal force of the shaft literally forces the oil to the inside of the connecting rod bushing. This absolutely insures oiling of the most vital part of the motor, they claim.

Spark plugs are located in the centre of the head, where they are entirely free from trou-

Transmission is of the customary all spur gear planetary type, giving two speeds forward and reverse. It contains only nine gears, which are formed with special cutters made for the particular number of teeth for which they are used. This insures accurate

system of a Splitdorf double coil, Splitdor ball bearing timer and two sets of dry batteries.

The rear axle is of the tubular type, carrying the driving shaft on flexible roller bear

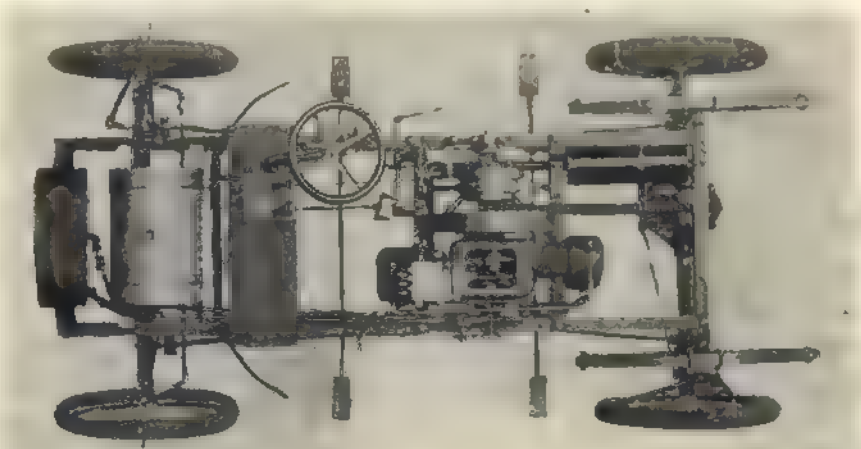


Side view Moline Model G Chassis; wheel base 86 in.; wheels 30 in.; front tires 3 in., rear 3½ in. Motor is placed with crank shaft above the main frame and body slightly overhangs completely, hiding the motor, which is easily accessible, however, through floor and seats.

gears and reduces the gear noise to a minimum. A system of band brakes provides for low speed and reverse, while a toggle joint pressure high speed clutch gives direct drive. Both band brakes and high speed clutch are perfectly adjustable. Drive to the rear axle is by 1 in. pitch Whitney roller chain.

The carburetor is a 1¼ in. Schebler, located

ings. A Brown-Lipe differential gear is used, fitted with double brake band drums. The front axle is of seamless steel tubing with steering knuckles brazed inside the ends. Front wheels run on double circles of ball bearings, ½ in. outside and ⅝ in. inside. Rear wheels are fitted with 3½ in. tires, while the front ones carry 3 in. tires. All wheels are



Plan view Model G Moline Chassis, engine under hood and easily accessible through floor and seats; gasoline tank [illegible] Whitney roller chain drive from [illegible] engine shaft to rear axle sprocket, sprockets carefully cut and fitted to reduce noise; three speeds and reverse and brake controlled by pedals, high and low gears by lever at driver's right, spark and throttle control on steering shaft, tubular rear axle, roller bearings, Brown-Lipe differential, tubular front axle, ball bearing steering spindles, full elliptic scroll springs, 60 in. long, at rear, one semi-elliptic, 44 in. long crosswise in front.

just below the frame on the right hand side of the car with exactly equal lengths of piping leading to both cylinders. The ignition

30 in. in diameter. The wheel base is 86 inches.

The cooling system consists of a large verti-

cal tube radiator with water tank on top, and a powerful centrifugal pump gear driven from the crank shaft. The piping is unusually large, and a large volume of water is forced through the jackets at all times. This feature of the car has been given very thorough test, and proven entirely satisfactory

The rear springs are full elliptic with scroll heads, while in front is used a semi-elliptic placed crosswise, making three-point suspension, for the frame. The cross spring in front has numerous claims to merit, among them that it reduces frame twisting to a minimum on account of the great latitude allowed the wheels on uneven roads, also that it carries the weight directly at the wheels, relieving a considerable strain on the front axle. The front axle is, of course, pushed by radius rods attached to brackets on the main frame The lower ends of these rods are close to the steering knuckles and leaves the very smallest possible chance of bending the front axle by striking an obstruction.

The steering gear is the well known Brown-Lipe, absolutely irreversible. The connections are given particular attention, and arrangements made so that bolts cannot lose off

The body is of popular type, with divided front seats and side entrance tonneau. The tonneau nicely accommodates three passengers, and is removable when desired by taking out three bolts.

The standard equipment includes two side oil lamps, steering staff horn, tire repair outfit and pump, also full kit of tools

More Room for White Steamers in New York

By the purchase of a 6-story, 50x100 ft., semi fireproof building on West End Avenue, White Sewing Machine Co., of Cleveland, Ohio, have brought up their floor space holdings in New York City to 85,000 square feet. The growth of their New York branch has been remarkably fast, their floor space increasing from 1000 to 85,000 in a little over three years. During the winter of 1902 and the spring of 1903 a 20x50 feet stable served the purposes of the N. Y. branch, but in May the company moved to a commodious two-story building at 215-17 North Forty-eighth Street. In the spring of 1904 they moved to a five-story and basement building at 42 West Sixty-second Street.

As the growth of business soon cramped their quarters they recently purchased the 100x100 feet of ground on West End Avenue, between Sixty-ninth and Seventieth Streets for garage purposes and decided to use the old property at 42 West Sixty-second street as a selling quarters. The six-story building on this 100x100 plot is on the southern half. On the northern half a three-story 50x100 addition is being built, the walls being made strong enough to hold additional stories should further enlargement become necessary. These two buildings and the one on Sixty-second Street give them the 85,000 square feet total floor space, room enough for 300 cars. Carl Page is manager of the New York branch and his staff of assistants include Joseph Ball, Max Greene and Harry Unwin, all well-known hustlers.

Building on West End Avenue between 69th and 70th Streets, New York City, recently purchased by White Sewing Machine Co., of Cleveland, Ohio, to be used as a garage in addition to the garage and showrooms now used by the New York branch at 42 West 62d Street.

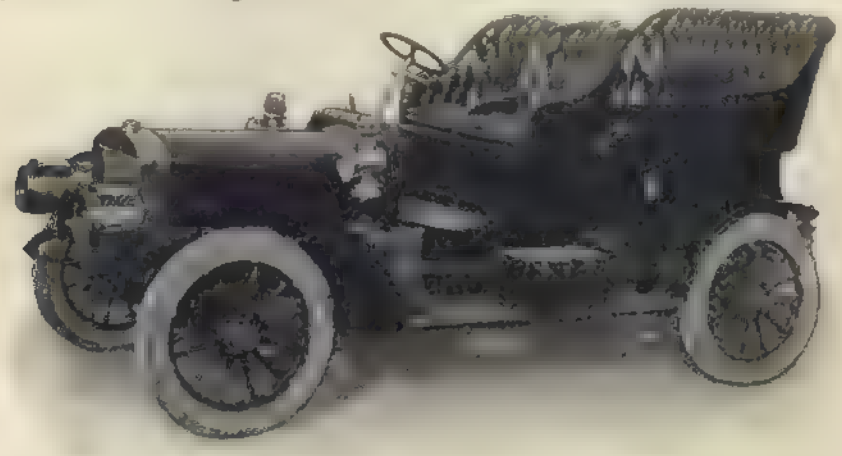
The address of the Howell Hinchman Co., as given in our descriptive article on their leathers in our March number, page 280, was incorrect. They are located at Middletown, N. Y., and not Middletown, Conn., as we had it.

Domestic Sewing Machine Co., Newark, N. J., who have taken up the manufacture of automobile parts, are very busy on a large number of job orders. Mr. Frederick K. Bash, formerly superintendent of the Veeder Mfg. Co., has been engaged as superintendent by the Domestic Co., and contemplates devoting considerable time to the automobile parts department.

Iroquois Type C, 25-30 H. P. 4½ in. bore, 5 in. stroke, detachable tonneau, side entrance, 4 or 5 passengers, light touring car, 30 in. wheels, 3½x30 in. tires, 96 in. wheel base, sliding gear, 3 speeds forward and a reverse. Price $2,250. Tops extra. Manufactured by Iroquois Motor Car Co., Seneca Falls, N. Y. The above cut was through error labeled Type "E" in the "Motor Car Review" last month

The York Motor Car Cmpany's "Pullman" Car.

York Motor Car Co., of York, Pa., are now on the market with their "Pullman" motor cars and had four cars exhibited at the New York Show. The York Motor Car Co., is a reorganization of the York Automobile Co. which has been testing out cars for a long time past and during the past season turned out a number of cars along the lines of the



Model D "Pullman" car made by York Motor Car Co. 30-35 H. P., 4-cylinder vertical motor; jump spark ignition; three speed and reverse sliding gear transmission; frame angle inside steel bar outside, wheel base 102 in., tread 56 in.; 34x4 in. tires weight about 2350 lbs., seats 5; tonneau of solid bent wood, finish in Pullman brown, automobile gray or red. Price $2500.

ones they showed at New York, which cars gave thorough satisfaction. The President of the Company, S. E. Bailey, is a prominent manufacturer of carriages. The Secretary and Treasurer, A. P. Broomell, is a manufacturer of specialties in iron and steel James A. Cline, general manager has been connected with the automobile business from its inception.

For 1906, the York Motor Car Co., are offering three models, a high powered, fast, 4-cylinder runabout, and two models of touring cars. The runabout is known as model B. and is equipped with a 4-cylinder vertical motor either 24-28 H. P. or 30-35 H. P. The wheel base is 96 inches and the wheels are 34 x 4 inches. A three speed and reverse sliding gear transmission is used. For the present, the runabout will be built only to order and bodies will be fitted to suit the purchaser's tastes.

Model C is a medium weight touring car driven by a 24-28 H. P. 4-cylinder vertical motor, power being transmitted through a three speed and reverse sliding gear transmission directly connected to the bevel gear drive on the rear axle. Jump spark ignition is employed and the cylinders are water cooled. All the "Pullman" cars are fitted with an expanding ring clutch of improved type, this clutch being provided with an additional sliding bronze ring for taking up wear. This clutch is easily renewed and starts the car without a jerk. It is also said to be free of end thrust. This model has semi-elliptical springs front and rear, of ample length, and is a very smooth rider. The wheel base is 96 inches and tread 56 inches. Tires are 32 by 3½ inches front and rear. The car weighs about 1975 pounds. Internal expansion brakes are provided on the rear hubs and an external brake on the propeller shaft. The frame is of hardened wood with angle inside and steel bar outside. The tonneau is of solid bent wood and the finish is in automobile gray, red or green. The car seats 5 passengers. The body is ironed for cape or extension top. The upholstery is in the best leather and the finish is of the highest grade. Price of this car is $2000.00.

Model "C" "Pullman" car made by the York Motor Car Co. Engine 24-28 H. P., 4-cylinder vertical motor; jump spark ignition, three speed and reverse sliding gear transmission, armored wood frame angle inside steel bar outside, wheel base 96 in., tread 56 in., 32x3½ in. tires weight about 1975 lbs. wheel base 96 in. seating capacity 5; finish gray red or green. Price, $2000

Model D is a 4-cylinder car of 30-35 H. P. Cylinders are vertical and are water cooled Jump spark ignition is employed. The transmission provides three forward speeds and reverse and drive is by shaft. This car also has an expanding double faced, bronze ring, clutch and both hub and shaft brakes. The wheel base is 102 inches and the tread 56 inches and 34 by 4 inch tires are used on all four wheels. The car weighs about 2350 pounds and seats five persons. The finish is

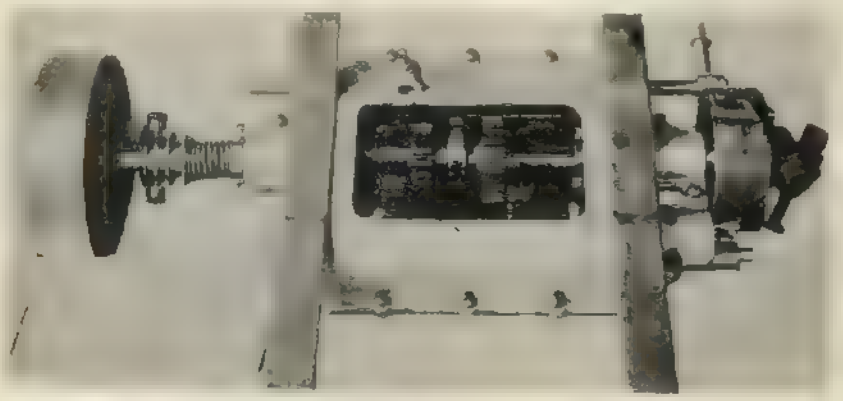
in Pullman brown, automobile gray or red. Tonneau is of solid bent wood and the body is ironed for either cape or canopy top. Price is $2500. While this car is of moderate weight, it is strongly built and intended to stand up against the heaviest work. The motor has ample power to take hills on a high

Side view chassis of Model C "Pullman" car made by York Motor Car Co.

gear. Half elliptic springs are used in front and springs of the platform type are used in the rear. The rear springs are outside the body and are of very ample length insuring comfortable riding. The cross spring at the rear is hung on a pivot so that no twisting strain ever comes on the body. The bodies are built, painted and upholstered by the York Carriage Works, and this work is of the very highest grade. The leather used is of the best quality that can be secured, and the painting is done with the greatest care. This car is very roomy; the first seat is wide and comfortable, the rear seat is extra wide and will accomodate three full-grown persons with the greatest ease. All bodies, whether runabout or touring type, are ironed for tops either of the cape or canopy type. These top irons run all the way down to the seat, and are fastened on in such a substantial manner that they never come loose.

The frame is of the composite type, being built up of steel angle on the inside, steel bar on the outside and a tough wood filler between. No sub-frame is used, the motor and transmission gear being supported directly on the inside angle iron of the frame.

The motor used in all models is of the same general construction. The 24-28 H. P. motor has cylinders 4½ in. bore, 4 in. stroke. All cylinders are cast separately, but they are of peculiar construction. The core forming the water-way cuts through the outside shell at both sides. This opening is made with a flanged joint all around it, and after these joints are carefully machined all the cylinders are bolted together, thus forming a complete

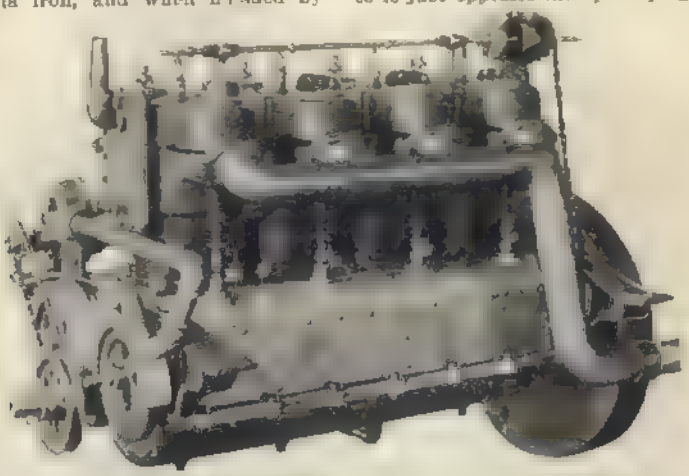


Clutch, transmission, etc., of the Pullman car made by York Motor Car Co.

water-way from end to end of the motor. The water is delivered to one end of the motor and discharged at the other, and has a free and unobstructed passage around every cylinder. This plan of making cylinders has the great advantage of insuring an equal thickness of metal all around the cylinder and of being free from any strains due to unequal contraction of metal. When the four cylinders are bolted together they form a complete girder or stiffening truss, so that there is no possibility of strain coming on the aluminum case which supports the cylinders. Any cylinder can be removed without disturbing the

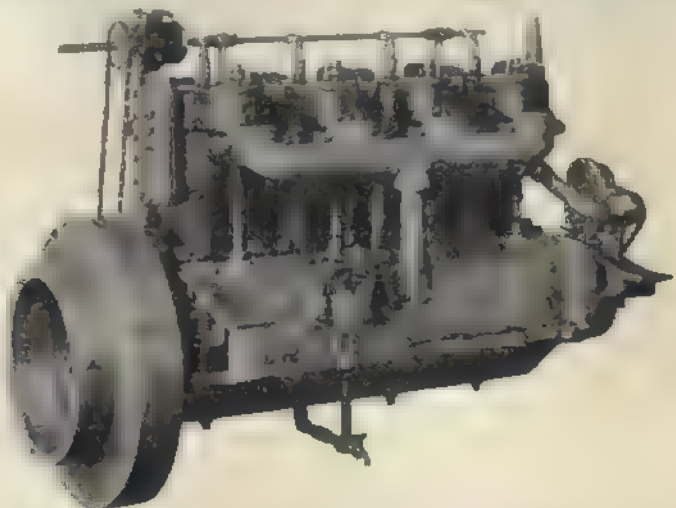
others. The inlet and exhaust valves are on opposite sides of the cylinders, are of exactly the same size and interchangeable. The valves can be removed in a few minutes' time. Jump spark ignition is used, and the spark plugs are directly in the centre of the cylinder. All cylinders are made from the very highest grade ammonia iron, and when finished by grinding the interior surface is like a piece of polished silver.

The crank shafts are forged from the very best quality of high carbon steel, and are accurately turned on lathes especially fitted for that work. Connecting rods are steel, with babbitted bearings. The crank shaft has a bearing between each pair of connecting rods.



Inlet side of engine of the "Pullman" car made by the York Motor Car Co.

Automatic oilers are attached to all motors, the oiler delivering oil to the cylinders and bearings. The motor is supported by steel castings, which are securely bolted to the aluminum motor base and sufficiently long to reach out and rest on the angle iron frame of car. An improved system of ignition is employed on the Pullman motors. No wires are taken to the spark plugs. A commutator of special design is used to distribute high tension directly to the plugs, this distribution taking place through a revolving shaft on which is placed four arms, or terminals. When the contact post in the commutator is in the proper position to create a spark one of the four arms on the shaft above referred to is just opposite the spark plug. The spark plugs have a small copper disc between the nuts where the wire is usually attached and the revolving arm on the shaft carrying the current passes this copper disc distant about 1-100 in., making a small gap through which the spark jumps to the plug. Each arm on the current shaft passes the plug of its cylinder at the proper time and ignites the charge.

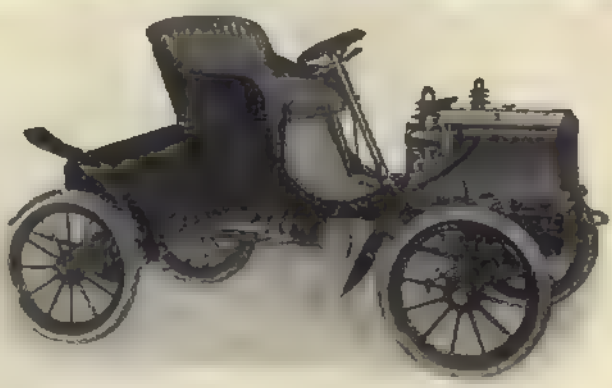


Exhaust side of engine of the "Pullman" car made by the York Motor Car Co.

This is an exceedingly simple arrangement, insures ignition every time and permits the operator to see at a glance whether all plugs are firing. It also has the advantage of permitting the plug to be taken out at any time without disturbing any wiring. The amount of wiring required is only a short piece running from a single coil on the dash to the commutator.

THE GALE 1906

Superior
Useful
Reliable
Elegant



SPECIFICATIONS: 18 H. P. Double opposed 5x5 motor, with Hill Precision oiler. Heavy spur gear planetary transmission; single heavy chain drive, to large live rear axle. Ratchet retained double external hub band brakes. Good road clearance, metal dash and running boards. 1- ga lon fuel tanks. 92" wheel base, 56" tread, weight, 1700 lbs. Full tool kit **and tilting body.**

GALE

DON'T you know this is the simplest and best runabout on the market? If you are from Missouri, our agents can show you.

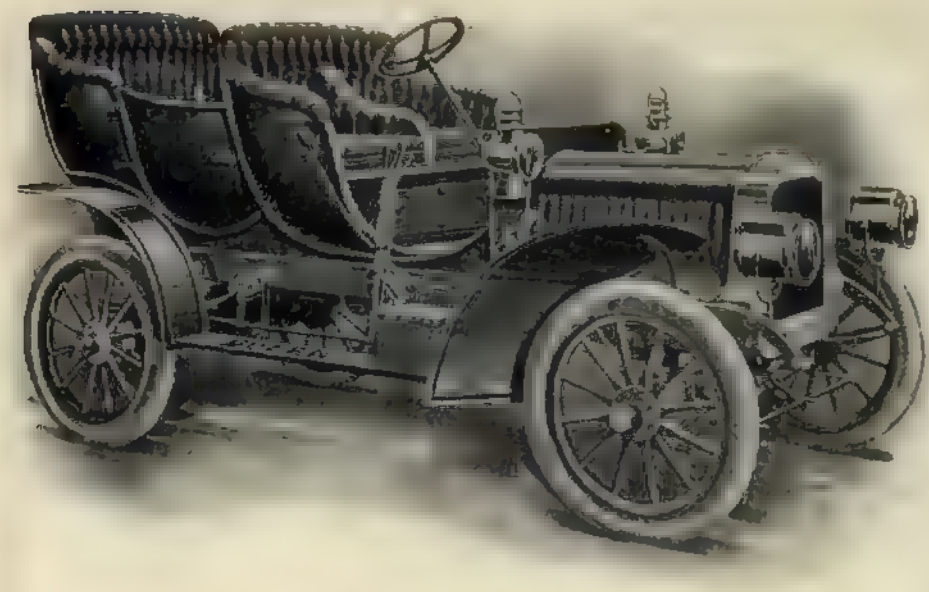
DON'T you think a wide seated, comfortable riding, powerful runabout, with three bow cape top and curtains, for $650, is a snap?

DON'T you understand that a good single cylinder car, that is convenient and easy to get at, is better than a cheap multiple cylinder?

DON'T you realize the truth of the statement that it's easier to care for **one** engine than it is for **two** or **four?**

DON'T you believe that it's worth two cents to ask us more about the Gale cars?

THE WESTERN TOOL WORKS, GALESBURG, ILL. U. S. A.



Touring Car Model "K," $2000.00

THE QUEEN

The Big 1906 Queen is a Queen for Fair

Motor Power, 23 to 28
No. Cylinder, 4 Vertical
Wheels, 32 x 4
Transmission, Sliding Gear
Speeds, 3 Forward and Reverse
Front Axle, Solid Drop Forging
Frame, Pressed Steel
Wheel Base, 101 inches
Batteries, Storage
Equipment includes five lamps
Horn and complete set of tools

We also have a handsome two-cylinder 18 H. P. Touring Car with detachable side door tonneau listing at $1100.00, and a two-cylinder 14 H. P. Runabout listing at $800.00.

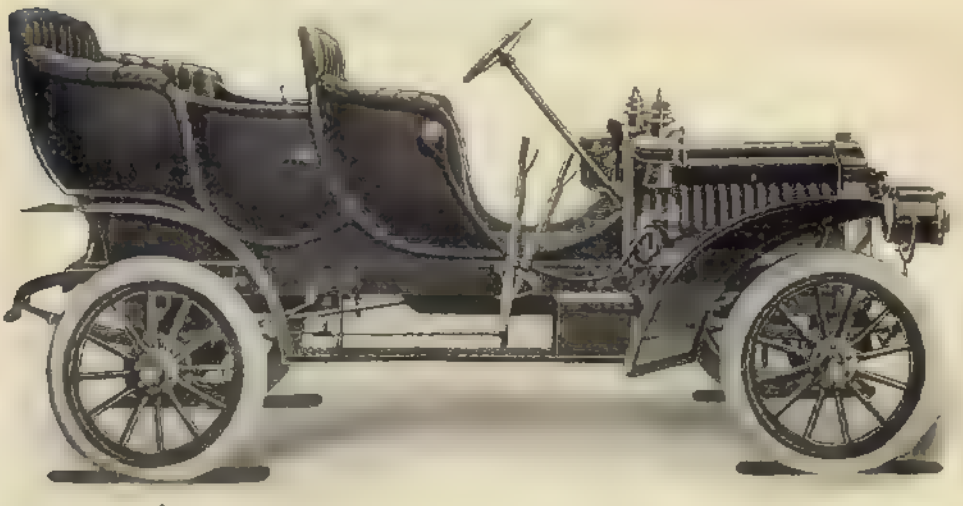
New York Agency: The Majestic Automobile Co.
Cor. 54th and Broadway

Chicago Agency: The Branstetter Motor Co.
1347 Michigan Avenue

We will exhibit at the New York, Chicago, Boston & Detroit Shows
Write us for Agency Proposition and Catalog giving full particulars.

The C. H. Blomstrom Motor Co.

Detroit, Mich.



THE QUEEN

Model "K"

4 Cylinders 4¼ x 4¾, 26 to 28 H. P. Cylinders, Pistons and Piston Rings made from best foreign iron, costing from three to four times as much as American iron. All bearings extra long and bushed with Parsons White Brass, the best bearing metal known. Cylinders, Pistons, Piston Rings, Crank Shaft, Valves, Universal Couplings and Transmission Shafts accurately ground. High Carbon Steel used in all gears and forgings. All Gears carbonized after being cut, and Crank Cases made from high grade Aluminum. Geared Circulating Pump and positive oiling system. The Motor throughout is a model of strength and simplicity.

New York Agency: The Majestic Automobile Co.
Cor. 54th and Broadway

Chicago Agency: The Branstetter Motor Co.
1337 Michigan Avenue

We will exhibit at the New York, Chicago, Boston and Detroit Shows

Write us for Agency Proposition and Catalog, giving full particulars

The C. H. Blomstrom Motor Co.

Detroit, Mich.

The Moline 1906 Cars

HUGH DOLNAR

The Moline Automobile Company, East Moline, Illinois, U. S. A., incorporated in 1904, has erected substantial factory buildings at East Moline, in a district which has a wide reputation for metal manufactures, and which may be confidently looked to in the near future as a great producer of motor wagons. The Moline Automobile Company has, so far, produced three models of cars. The first was placed on the road in February, 1904. This model was named the "Moline Touring Runabout," detachable tonneau body, wheel base 74 in., wheels 30x3½ in, motor horizontal pair of opposed cylinders 4½x4½ in, four-cycle, water-cooled, planetary speed change, chain to divided rear axle, weight 1400 pounds, price $1000. Fifty of these first Moline cars were produced in 1904.

During the season of 1905 the first Moline car, improved in many details and having its wheel base augmented to 86 in., was offered as Moline Model "D," fifty of them being made and sold, and has been again improved and will be offered in 1906 as "Moline Model "G," with these specifications:

Moline Automobile Company's 1906 Model "G," wheel base 86 in., gauge 56½ in., wheels 30x3½ in. rear, and 30x3 in. front; motor, a pair of horizontal opposed cylinders, dimensions increased to 4¾x5 in., weight 1600 pounds, detachable tonneau body for four passengers, can carry five. The price of this car has been placed at $1000, including mats, horn, two oil lamps and a full tool equipment.

The Moline Company's first four-cylinder car was on the road in December, 1904, and fifty of these cars, known as "Model B," were made and sold in 1905. The wheel base was 105 in., gauge 56½ in., wheels 32x3½ in., vertical and tandem, under hood in front, planetary speed change, bevel gear to divided rear axle, detachable tonneau body for five passengers, weight 1900 lbs., price $1600.

For 1906 the Moline Company will offer three models, as follows:

Model "G," detachable tonneau, four passengers, price $1000.

Model "C," four-passenger tonneau, four-cylinder motor, sliding speed change and bevel gear drive, price $1750.

Model "A," five-passenger side entrance tonneau body touring car, very fine, wheel base 110 in., gauge 56½ in., wheels 34x4 in.; motor, four vertical cylinders tandem, 4½x4, sliding speed change, three speeds forward and a reverse, bevel gear drive to divided rear axle, two rear hub brakes on each rear wheel, weight 2400 pounds, price $2500, including mats, horn, two oil lamps and tools.

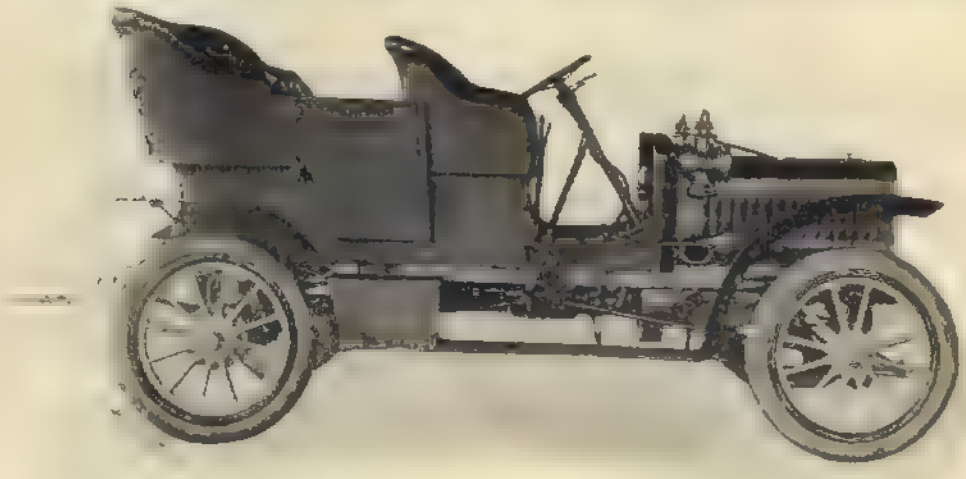


Fig. 1. The Moline 1906 Model "G," side entrance touring car, for four passengers, can carry five. Wheel base 100 in., gauge 56½ in., wheels 32x3½ in., motor four cylinders tandem 3¾x4½ in., sliding gear three speeds forward and reverse, and bevel gear to rear axle. The side entrance door is wide, rear seat 44 in. wide, pair of upholstering weight 1800 pounds, price $1,750, including mats, horn, two oil lamps and a full tool complete tool equipment much superior to that usually given, including everything likely to be needed on the road.

This new Moline Model "A," which will not be ready for the 1906 New York Show, but which it is hoped to exhibit at Chicago, will be in every particular as good, elegant and luxurious as the Moline Company can produce, although the price has been fixed so low as $2500. The car will not be extremely large, but the wheel base adopted, 110 in., is long enough to ride well on any roads, and more than long enough for crowded streets, and gives plenty of room for five passengers, with space for baggage. The motor driving this fine car is of the first order, cylinders and pistons ground, piston rings ground on three surfaces, ignition by jump spark and storage battery, Hill Precision Oiler, all plain bearings except front wheels, which are on ball bearings, ⅝ and ¾ in. balls, rear axles and propeller shaft on roller bearings, with ball thrust bearings. The whole motive sys-

tem of this car will be of well tried elements whose durability has been abundantly proved by extended use, the Moline Company preferring reliability of performance and certainty of action to possible advantages not fully assured, which might be gained from untried novelties.

The Model "C" is the only Moline 1906 car sufficiently advanced to be fully illustrated, at the date of this writing, December 16, 1905, and is here described in some detail for the first time.

The Moline 1906 Model "C" is a side entrance touring car for four passengers, can carry five. Its wheel base is 100 in., gauge 56½ in., wheels 32x3½ in.; motor, four cylinders tandem, 3¾x4½ in.; sliding gear, three speeds forward and reverse and bevel gear to rear axle. The side entrance door is wide, rear seat 44 in., clear width inside of upholstering. Weight 1800 pounds, price $1750, including mats, horn, two oil lamps and a full and complete tool equipment, much superior to that usually given, including everything likely to be needed on the road.

For a full touring equipment, including top, with full side curtains and storm front, pair of gas lamps with brackets and independent generator, odometer (total and trip), extra tire complete with cover and brackets to carry same and an extra storage battery. In addition to the foregoing list, the price of this Moline Model "C" is fixed at $2000, it being the intention to carry this venture into superlatives and make it absolutely and undeniably the finest, best and most completely appointed small touring car offered at its price for the season of 1906.

NOTABLE FEATURES.

The thing to first attract the attention of the experienced observer in the design of this car is the adoption of full elliptic scroll springs in the rear, and a wide heavy cross half elliptic spring in front. This spring arrangement gives the principal practical advantages of three point suspension and fully protects the car body from those destructive twisting strains which are inseparable from any four-spring arrangement, whether half-elliptic or full elliptic, where the chassis frame is one single structure with fixed members only. This full elliptic springs behind with the cross half elliptic in front cannot transfer individual wheel lifts to the chassis frame and body, and practically reduces front wheel lifts and drops by one-half their vertical extent before transferring them to the chassis frame. The rear wheel lift and drop is far better taken by full elliptics than by half elliptics, and by scroll head springs than by button heads, and the Moline Model "C" rides as would be expected, as smoothly and with as little side sway, body twist and tossing of passengers as the road surface and speed permit, and if driven under a twenty-mile rate will carry its passengers comfortably anywhere.

It may be justly said here, that this form of car body spring support, two full elliptics

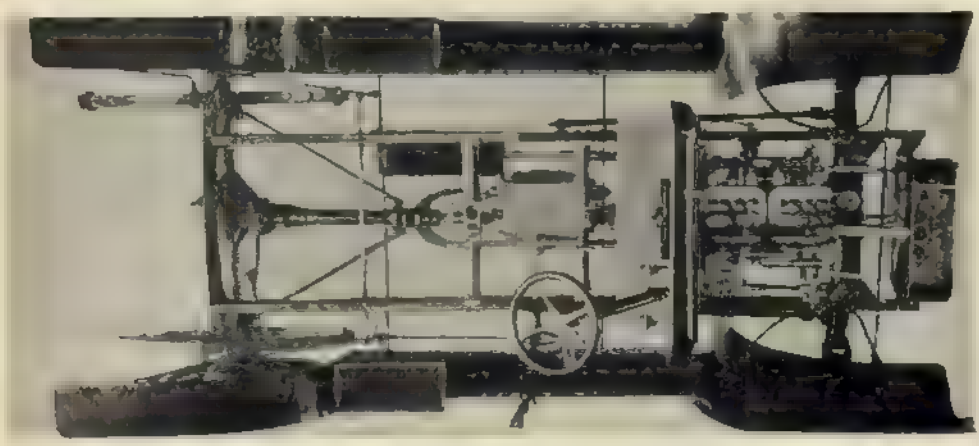


Fig. 2. Moline 1906 Model C, chassis plan; over all 109 in., width 27 in. parallel greatest side depth 4 in. cross spring in front, full elliptics in rear; rear spring hangers and rear chassis frame cross member form one integral steel casting; one channel section pressed steel cross member over front spring, gusseted, as shown. This chassis frame has only these two cross members, all cold riveted. The aluminum motor base lugs are fitted inside and on top of the frame sides, and same with the gear box lugs, of which that in front is integral with box ba— while that in the rear is applied to the box and finished as if all lugs were integral, to fit inside, and hang on, frame sides.

in the rear and a half elliptic in front, having half the vertical action of the rear springs, bears rigid function analysis as well as any possible form of elliptic springing, where only a single chassis frame is used.

As to power and transmission, the cylinders are well finished, and with sixty-five pounds compression have ample maximum power to push this light car, while for close throttling on the level, the piston area is enough to give full economy.

The drive from the crank shaft to the drivers is all in the most approved 1906 manner, sliding gear, plain bearings up to the propeller shaft and precision oiling, assuring a maximum expectation of reliability.

Ignition is of the very simplest form, with the best elements known in the trade, jump spark plugs, coils of most approved construction and the best storage battery.

The control is extremely simple, is interlocking to the extent of making it impossible

for an inexpert driver to damage the gearing, and having both the ordinary and emergency brakes applied where they will do the least harm, to the rear wheel hubs directly. A brake is a motor car necessity, but it must be borne in mind that it involves a mechanical contradiction. The motor is built with the one intention of pushing its drivers to propel the car forward; the brake is placed to nullify the normal action of the whole car, and should not be so placed as to vex the propulsion system needlessly; in other words, the brake shoes should be applied as near the wheel tire and road surface contact as possible, instead of transmitting the brake effect through a long chain of vital elements to the rear wheels, and thereby adding enormously to the wear and tear of the hardest worked pieces in the motor wagon.

the pump pinion, two turns to one crank shaft turn. This does away with all belt driving. A belt drive is one of the best drives known in experienced hands; machine designers, therefore, are prone to place belts in their constructions, and have no trouble with them until they go into the hands of purchasers, who have not been used to belts all their lives and can and do find ways to make the belts give no end of trouble, so that no belt should ever be placed anywhere in an automobile. So long as water cooling is used the pump and fan will continue to be placed, and the Moline combination of a centrifugal pump and fan, all gear driven, is as good as can be placed

The Moline pistons are slightly tapered, free in the cylinders, and have four rings, one over the piston pin and the other three above.

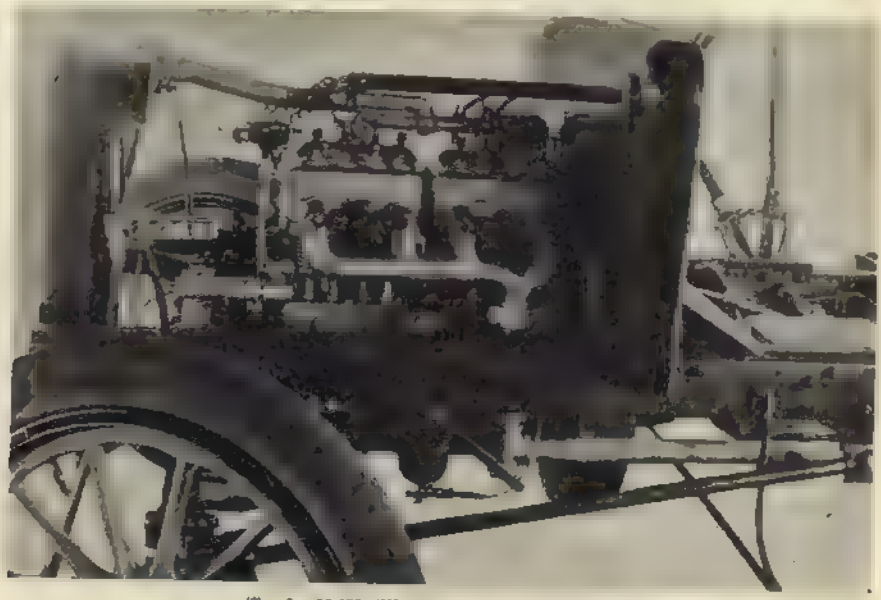


Fig 3 Moline 1906 Model 'C,' motor left side.

THE ENGINE.

The cylinders, see Fig. 6, are cast in dual units, with two exterior exhaust passages, one from each exhaust valve direct, and one exterior intake opening branching to the two intake valves, which permits placing one Y pipe from the carburetor, each single top branch of which supplies the two cylinders of one unit.

The spark plugs are screwed into the intake valve chamber screw caps, and the priming cups are screwed into the exhaust valve caps.

The valve heads and stems are integral nickel steel drop forgings, 45 degree angle, interchangeable, all 1½ in. diameter ports. The cams are steel, hard, applied to the cam shaft, taper pin retention, rivetted. A bronze and rawhide pinion on the crank shaft drives the grey iron cam shaft gear. The centrifugal pump, see Fig. 8, is driven two to one gear multiplication from the cam shaft, making the circulating pump rate same as crank shaft. The fan is gear driven from

The pins are solid tool steel, ⅞ in. diameter, hardened and ground, fixed in the pistons. The rings are 45 in. diameter angle lap, ground on three surfaces.

The general scheme of bearings in the Moline is bored and faced seats fitted with flanged cylindrical half boxes, finished inside and outside. The crank shaft and crank wrists are in nickel babbit bearings of this form. The rods are steel drop forgings and have bronze bushes forced into the solid piston end eyes, oil catch basins and oil hole on top, all splash lubricated. The wrist ends of the rods are full marine type, caps screwed hard on six thin liners, about 1-16 in. total thickness on each side, caps held by driven bolts, castellated nuts and split pins. These rod ends are bored and faced and fitted with nickel babbit half boxes, flanged, finished inside and outside, and interchangeable. Moline compression is sixty-five pounds.

The clutch is a leather faced cone, 15½ in. diameter, 15⅛ in. effective leather face, with four flat double ended springs under the fac-

ing, giving eight points of gradual engagement contact. The male clutch member is aluminum, made as light as possible, of course

In points of paint and polish, makers of cars built to sell are not usually deficient, however they may scamp workmanship and lower cost of materials to make a big show for little cost. The Moline Company is not so foolish as to belittle the value of high finish nor fine appearance, but it applies the finish to good materials treated with the very best workmanship, with the full intention of both making a brave showing and backing the good appearance of their cars by sound and honest and intelligent treatment of the best materials that can be had.

THE SPRINGS.

Scroll head full elliptic springs 42 in. long 1¾ in. wide, turn on the rear axles and are fixed at the top to a steel casting forming the rear chassis frame member. The front single half elliptic spring, shackled to hangers integral with the drop forged front axle yokes pinned and brazed into the steel tape iron axle ends is 42 in. long by 2¼ in. wide, ribbed and banded. This front spring has a clear drop of 12 in. over the front axle; the front spring is fixed to a pressed steel channel section frame crossgirt, the motor frame front end reaching nearly to this spring carrying cross member.

Two struts, globe joints on the front axle forks, extend about 36 in. back and slightly

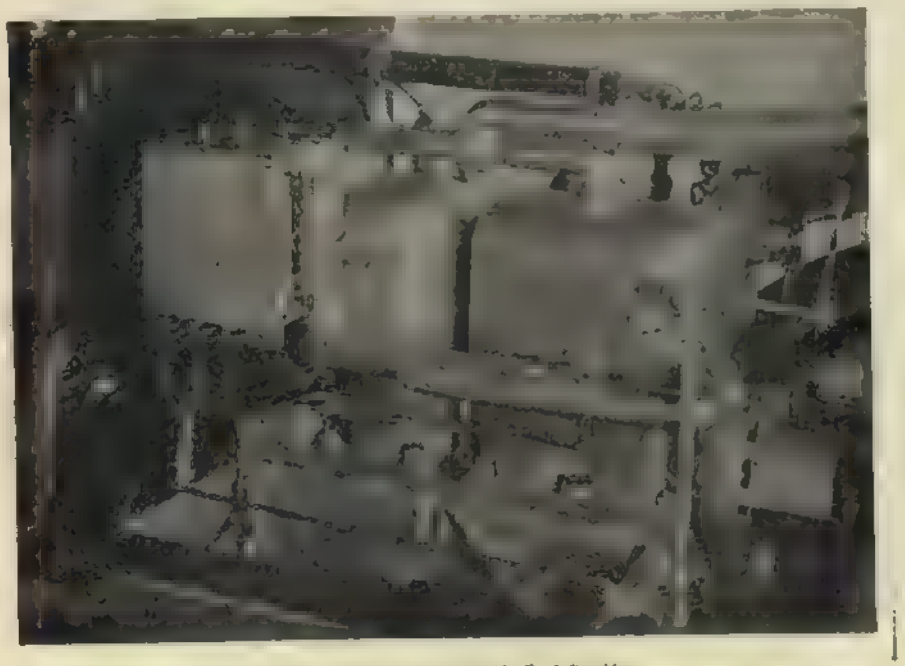


Fig 4. Moline 1906 Model C, left side.

THE WHEELS AND AXLES.

The wheels, 32x3½, have malleable casting hubs, with applied pressed steel internal and external brake drums, 10 in. outside diameter, 9⅝ inside by 2 in. face, finished inside and out, fitted with Raymond brake bands outside and single piece internal toggle joint expanded bronze emergency brakes inside. The exterior ordinary bands are pedal applied. The rear wheels are applied directly to the rear axle tapered ends, with long keys, nut and split pin retention.

The front wheels are on two circles of ball bearings, ½ in. and ⅝ in. dia., on tool steel cones. The rear axles 1¼ in. dia., carried on Hyatt roller bearings with ball thrust bearings.

The front axle is a two-inch steel take, dropped 2½ in. The rear axle is two 2½ in steel take sleeves, pinned and brazed into the capped globular bevel gear casing. The rear springs are revolvably mounted on the rear axle sleeves.

upward to flat joint drop forged brackets fixed to the bottom and outsides of the frame sides.

Two rear axle struts, non-adjustable, reach from near the rear axle ends forward and approach each other where they are fixed to a steel collar back of the steel yoke, which is jointed to brackets fixed to the rear of the aluminum casting change gear box supporting chassis member, in the central plane of the single Spicer universal joint which drives the propeller shaft. This telescopes in the spicer joint hub, and carries the bevel pinion on its rear end, and is carried on Hyatt roller bearings at the ends with a ball bearing at the rear to take the pinion thrust. This propeller shaft is 1 in. dia. and 38 in. long.

The bevel gear is 6 d. p. by 1¼ in. face, hardened. The balance gear is Brown-Lipe spur. The live rear axles are 1¼ in. dia., and are carried on two cages of Hyatt roller bearings with ball thrust bearings inside. The rear wheel hubs are applied to taper bearings

with long keys and outside nuts.

THE CHASSIS FRAME.

See Fig. 2 and caption. The Moline Model "C" chassis is extremely simple, no sub-frame being placed, and the motor base lugs and gear box lugs forming the intermediate frame cross girts between that which takes the front spring, and the steel casting, which takes the rear springs and also forms the chassis frame rear cross member brackets under frame sides. This is one of the simplest and most substantial of chassis frame constructions, the integral spring brackets and rear frame cross member making the fewest pieces in the rear spring assembly, while the channel section front cross members of pressed steel, gives ample strength for the cross spring support.

CONTROL (See Fig. 5.

The clutch rocker is connected with one

Fig. 5. Moline 1908 Model C, control. (Specifications in text.)

This simplicity of construction avoids many joinings of metal surfaces, and so increases the expectation of reliability, while reducing the labor cost.

One Spicer universal joint telescopes on the squared forward end of the propeller shaft, which is on Hyatt roller bearings at both ends, ball bearings to take pinion thrust. Diagonal struts, flat joints, on rear axle sleeve, pass through finished seats in integral yoke lugs, retained by castellated nuts and split pins at each lug end. The yoke is a steel casting, jointed to the applied gear box lug in plane of Spicer joint centre. The front board is pressed steel, wooden panel, and carries the spark coil box.

The front axle is supported by two struts, globe joints to axle sleeve, flat joints to steel pedal and the outside emergency brake lever, which is latched to its quadrant. The right hand pedal applies the ordinary brake only and is not connected with the clutch rocker. The left hand pedal disengages the clutch and releases the change gear.

The latched outer lever when pulled backward first disengages the clutch and then applies the internal emergency brake shoes, incidentally also releasing the change lever.

The change lever is locked against movement so long as the clutch is engaged, and is latched to a five-notch quadrant.

Two small vertical pedals not shown in the illustration are placed to rear of the steering column, the right one is the accelerator and the left one works the muffler cut-out.

The Brown-Lipe steering gear is used. The

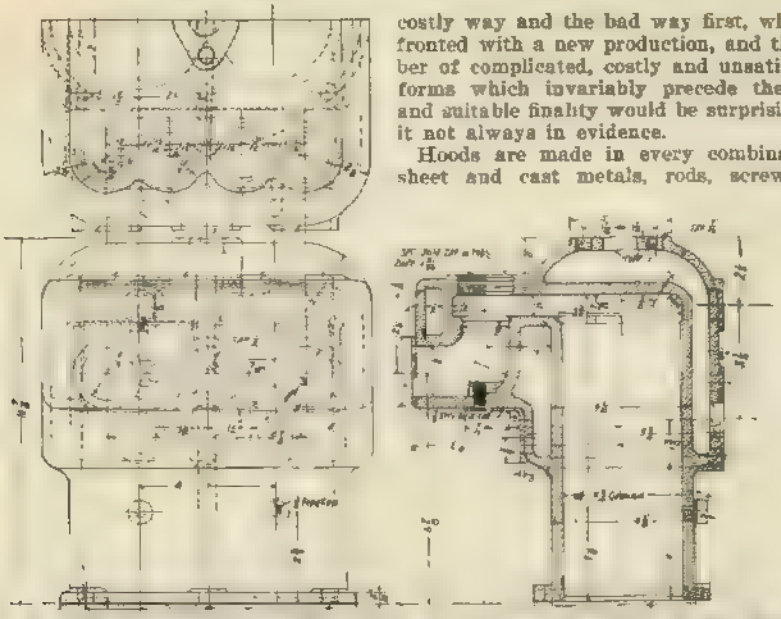


Fig. 6. Moline Model C cylinder, working drawing reproduction. The Moline cylinder finishing machine [illegible] a rest period of thirty [illegible] and the final boring and [illegible] on the new Heald cylinder grinding machine [illegible] for grinding [illegible] bore horizontal grinding on emery wheel, speed [illegible] surface per minute water cooled. The Moline cylinders are [illegible] annealed after machining

spark and throttle levers move horizontally to work two vertical rockers, sleeve and solid rod, having a common axis. The throttle hand lever movement must move the accelerator pedal, but the pedal movement does not affect the rocker.

THE HOOD

Every designer chooses the hard way, the costly way and the bad way first, when confronted with a new production, and the number of complicated, costly and unsatisfactory forms which invariably precede the simple and suitable finality would be surprising were it not always in evidence.

Hoods are made in every combination of sheet and cast metals, rods, screws, nuts and split pins, and have even been offered with leather straps and buckles to keep the unstable elements together.

The Moline hood is one piece of sheet metal, bent to slide over the radiator, two lengthwise doors on top, and the lower edges rolled up in lengthwise scrolls or beads about 5-16 in. diameter, and these beads simply

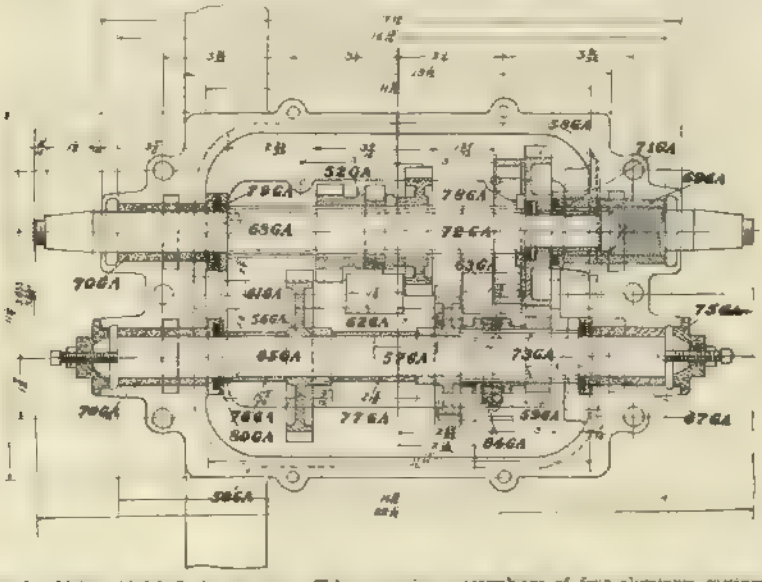


Fig. 7. Moline Model C change gear. This casing is an assemblage of four aluminum castings, the base of which is an oil well, the top box member integral with the front legs and to which the rear legs are applied, and the hand hole cover. The shafts are round with integral feathers, casing box seats bored and fitted, shafts carried in nickel babbitt flanged split bushes, non-adjustable, finished inside and outside, interchangeable with ring oilers. The gear box legs reach across and hang on the chassis frame sides, and serve as frame girts. The action is progressive. The gearing is all hand slid, standard [illegible] face gear bolting faces ground after hardening. The gear shift rod is interlocked with the clutch disengagement action. The motion of the gear shifting lever is transmitted to the gear change shifting member through one single working joint.

slide under full length chps, making a "round dovetail" seating, which holds the thin sides both inwardly and outwardly. Studs on the rear ends of this one-piece hood pass through the front board, retained by bronze wing-nuts. The rear hood door opens for oiler access, and that in front opens to commutator and water tank. This hood can slide far enough forward to fully expose the motor, and yet be well supported in the slide ways.

The Moline Automobile is an offshoot from the Root and Van DerVoort Gas Engine Company, a very successful and constantly increasing business, founded in 1898, and at present working about 150 hands in two shifts covering twenty-two hours per day. The "R. and V." gas engines have an enviable reputation, so that the Moline car motors are the result of ripe and successful previous experience in gas engine construction.

ON THE ROAD.

December 16, at noon, the Moline 1906 Model "C" left the Moline shops, East Moline, bound on a 50-mile cruise under jury rig. tester's seat in front, no foot board, W. H. Van DerVoort, President and Chief Designer of the Moline Company, driving, with C. H. Van DerVoort, Moline Chief Tester, on a strapped-on cushion on top of a dead-weight box dos-a-dos, at rear of driver's seat, and Hugh Dolnar as front-seat passenger. The full elliptic rear springs looked tossy with no load, and the dead weight box with 150 pounds of cast iron nailed up inside was put on at the writer's suggestion; young Van DerVoort is no trifle, and it looked as if the rear springs would act about right with him and the 150 pounds of cast iron on top of them, but there was no place for his feet except on the end of the chassis frame, which brought the young man's knees up to his chin, and didn't look like much comfort, even if he stuck out and got through alive. So a piece of inch by ½ inch steel bar was bolted on for a foot rest. Each Moline is a roomy suburb, streets paved with natural Illinois black mud, which was frozen on this beautiful, brilliant 16th of December, into the roughest assemblage of ruts, bumps and hollows the writer ever rode over. The Moline Model C is fast and was flying light under the jury rig, and, as the writer had ascertained by private inquiry that Van Der Voort was not afraid to push his own work, the outlook appeared to be about ninety minutes for the fifty miles, and maybe a little bit better than that. But the run did not last anyhing like an hour and a half, and in fact Hugh Dolnar did not take out his watch to look at the time when he got off the car. Later, when he was lying on his back on the frozen road with one seat cushion under his head and another under his smashed left ankle he did look at his watch and it was exactly 12.15, start at 12 flat, total elapsed time fifteen minutes, total running time not taken.

Hugh Dolnar's notes, mental, of the run, were about like this: "Mighty spry car." Bounce! "Van don't need to be told to push her." Bounce! "Mud frozen mighty hard—roughest surface I ever met—wonder how the young fellow is sticking on behind. Wow! But that four-foot wide hog wallow across the road was a bouncer! All right behind? Hang on for the turn!" Hugh Dolnar meant a right-angle turn in the road just ahead, not the turn-over he thought the car made the next instant.

The writer sat on the outside and went with the tester's seat when it left its moorings in rounding the turn. Plenty of time to think. Hugh Dolnar wondered how hard the bump on the hard road would be and whether the chassis would fall on him when things settled down quietly.

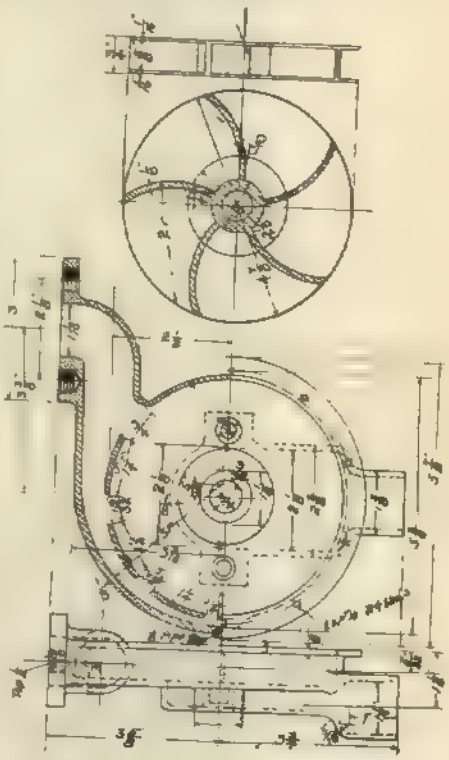


Fig 8. Moline Circulating Pump. This is bronze centrifugal type having integral side plates which [illegible] so as to obtain the maximum effect by reducing the friction of the mass of water passing the vanes. This construction is recognized as standard in large pumps of this class, but is believed to not have been before applied to automobiles. There are motor car builders who do not believe rapid water circulation needful, but it seems clear that with a given cooling effect and a given heating effect the nearest approach to uniform low temperature of the entire system will be had with the most rapid movement of the heat transferring medium, or, in other words, that a given radiator will cool a given motor better with a rapid water circulation than with slow circulation. In proof of this seven new self-evident propositions the 1905 Moline cars had slow circulation [illegible] and [illegible] the water in the radiator while with the pump here illustrated the radiator cannot be made to boil by any working condition combinations.

But all this was an error in Hugh Dolnar's observations. He was certainly there, but he didn't exactly know what was being done. The Moline Model C didn't turn over at all; it just stood there on the road quiet as a lamb, right side up, no seats, no passengers, the only much hurt one, and finally after ev-right as a trivett.

The constable who tried to arrest Van Der Voort for fast driving just before the Model C came to the hog wallow strolled up and looked on with much satisfaction, while poor Van Der Voort, the picture of miserable regret, was getting the shoe and stocking off erything was quieted down, doctors sent for, crowds gathered and opinions exchanged, the constable told us he saw the tester's seat supports give way when we bounced through the hog wallow, going about seventy-five miles an hour in his opinion. The turn was close by, and Van had the speed down to not over twenty miles when we rounded the curve, and of course, the seat slid off and dumped the historian into the road. Young Van Der Voort came, too, but he sprawled on the ground, rolled over two or three times and was not hurt at all. Van Der Voort, driver, held on to the steering wheel and stayed on the car.

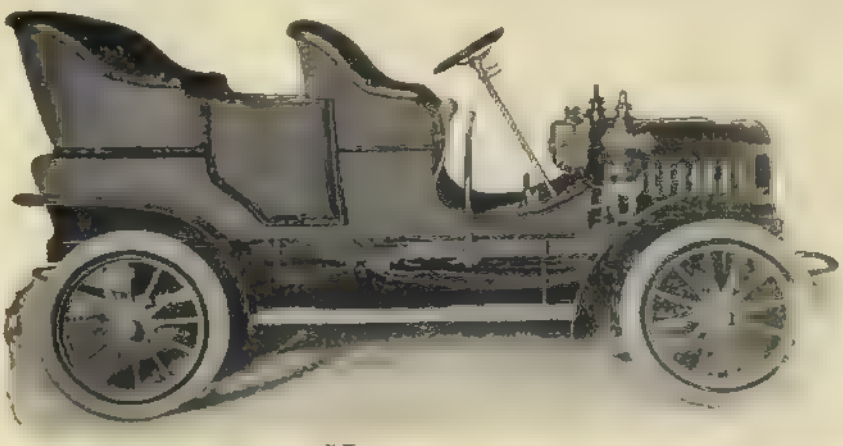
The first doctor to arrive was very cheerful. "Broken? I should say so—smashed all to bits. You'll never use that ankle again." The next one was more familiar with the situation. "Potts fracture," he remarked, after he had moved the fragments sufficiently to determine the precise line of separation. "Stiff joint? Has that tendency. Well, cannot certainly say. Four to six weeks, probably."

It began to look to Hugh Dolnar as if the January Journal was not to have so many new car stories in it as he had expected.

Things were brighter about 4 o'clock same day when Hugh Dolnar was a guest of the Hotel Moline Hospital, with a very notional as-to-position left foot on two pillows, while Designer Van Der Voort was giving him the figures to complete the Moline Model G story.

The 1906 Auburn

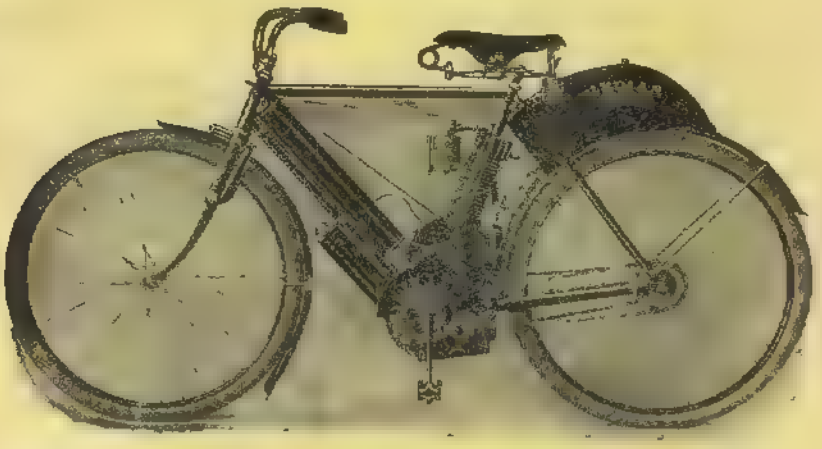
Besides its strong, well constructed chassis, the 1906 Auburn car has a strikingly attractive feature in its handsome, roomy body, the manufacturers, Auburn Automobile Co., Auburn, Ind., claiming that in appearance it equals cars at double the price. The seats are large and are set at a comfortable distance apart. The hood is also well designed. The frame of this car is of angle iron, 2x3x ¼ inch and all cross pieces are of angle iron, also a tubular roller bearing axle is used in rear and a solid square axle in front. The frame rests on full elliptic springs at the rear and on semi-elliptics in the front. Thirty by 3½-inch tires are regularly supplied, but 32x4-inch ones may be had on order at additional cost. The tread is 56 in. and the wheel base 94 in.



The 1906 Auburn Car. Wheel base 94 in., tread, 56 in., fitted with 30-inch wheels, 3½ or 4 inch tires; angle iron frame; double opposed, 5x5, 20 H. P. engine, planetary transmission; weight 1150 lbs.; price $1250.

The 1906 Auburn is driven by a double opposed, 5x5, 20 H. P. water-cooled, gasoline engine. The valves are mechanically operated. A force gear pump circulates the cooling water. The valves are at the ends of the cylinders, permitting the admission of a full charge directly back of the pistons and giving the pistons the full benefit of the explosion, it is claimed. The burned gases also are expelled quickly and easily. The crank shaft is 1¾ in. in diameter. The wrist bearing is 2¼ in. and the main bearing next to the flywheel 3¼ in., all bearings being of the finest babbitt. The cam shaft is in the lower part of the crank case and runs in an oil bath. This placing of the cam shaft not only eliminates practically all wear, but also renders it unnecessary to remove the shaft to get at the wrist bearing. The pistons are of semi-steel, ground and polished and fitted with three rings, which are ground on faces and edges. Connecting rods are very large and are provided with oil grooves at the top, which convey oil to the wrist bearings. The jacketing provides a large water space about cylinders and valves. The valves are fitted in a cage and can be very quickly removed in case regrinding is necessary. All are interchangeable. A double throw gear pump forces the water through both cylinder jackets, at the same time insuring uniform and thorough cooling of both cylinders. Lubrica-

In 1905
The Indian
Won



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The Oldsmobile touring car, with its ample seating capacity, side door entrance, and expensive finish, gives the value of a great many higher-priced touring cars possessing not a dollar's worth more of value. It leaves nothing to be desired except racing speed. It will carry four or five passengers with absolute ease across country, up grades and through unusual conditions without faltering and without straining. The performance of the car has made it a winner among automobilists.

In rough roads and hills it is recognized as the best, for any car of its horse power, "*20 horse power*." Color dark blue, yellow running gear, seats five passengers, wheel base 90 inch tires Diamond 30x4 rear, 30x3½ front, wheel irreversible steering, two brakes, angle steel frame, horse power 20, 2 cylinders, size 5¼x6 inches, horizontal opposed. Honeycomb radiator, double side door. All parts "Getable," gasoline and spark control on wheels.

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We have every kind and make of Standard Automobiles. Complete bargain list sent on request.

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Dealers, please wire us your order, no discount allowed from the above price.

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ADLAKE BICYCLES CROWN

AUBURN

1906 Model C

This car has a 5 x 5 motor and will do any stunt that any other car will do with the same size motor. We do not care what make the other car is, we make no exception.

Our car runs and runs all the time. We have as little trouble as any other concern in the business. Now what more do you ask. We have the goods at the right price and we are giving you more for the money than any other concern you can name. These are facts and not hot air.

Auburn Automobile Co.

Auburn, Ind.

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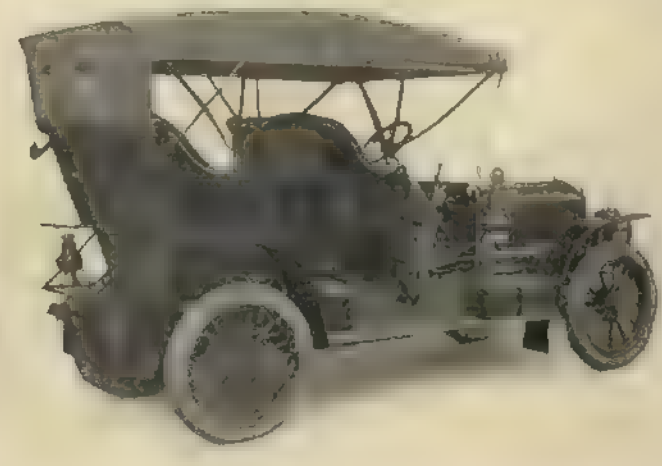
The Sensational Car of 1905



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Four Cylinder, 24 H. P. 2,000 lbs., $3,000. Six Cylinder, 40 H. P., 2,500 lbs., $4,000.
Cylinders, both cars, $4\frac{1}{8} \times 5\frac{1}{2}$ Inches.

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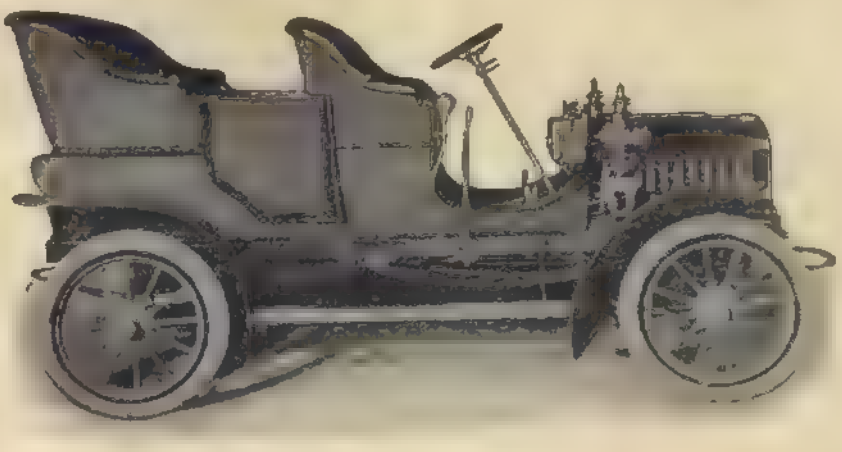

1906 Model C

This car has a 5 x 5 double opposed motor and will do any stunt that any other car will do with the same size motor. We do not care what make the other car is, **we make no exception.**

Our car runs and runs all the time. We have as little trouble as any other concern in the business. Now what more do you ask. We have the goods at the right price and we are giving you more for the money than any other concern in the business. These are facts and not hot air.

Write us for agency.

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60 H. P.

AUSTIN

1907 MODEL

The 1907 model has the following changes: Wheel base 115 inches (6 inches longer)—hinged hood 5½ inches higher 12 inches more depth to the tonneau. The dash of aluminum and mahogany—supports an improved folding glass front.

Ample seating capacity for 8 people.

The 1907 model contains **all** the exclusive **Austin** features.

Two Separate and Complete Ignition Systems

Sliding gear transmission (selective type—**Four Forward Speeds.**) **NEW DEVICE** for changing gears—and new interlocking system absolutely prevents wrong manipulation. **The Austin Spring Controller**—makes riding easy—at any speed over any road.

We manufacture more of the complete car in our own factory than any other maker in the United States, which enables us to guarantee the strength, quality and workmanship of every part.

Catalog containing complete information free for the asking.

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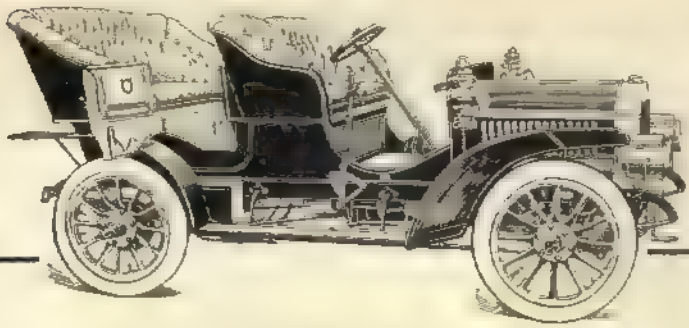

Pope-Hartford Model G

2-Cylinder Opposed 18 H. P. Price $1600

2-cylinder opposed motor located under the hood. **Sliding gear transmission,** 3 speeds forward and reverse. **Bevel gear drive.** Powerful double acting brakes expanding in drums attached to rear wheels—double acting band brake on transmission shaft. **Speed, 35 miles an hour.** Seating capacity 5.

The Pope-Hartford Model G 2-cylinder touring car perpetuates our successful 2 cylinder car of last season with **important improvements suggested by a year's service which makes this car the peer of any 2-cylinder car in the world.**

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LARGEST AUTOMOBILE SUPPLY HOUSE
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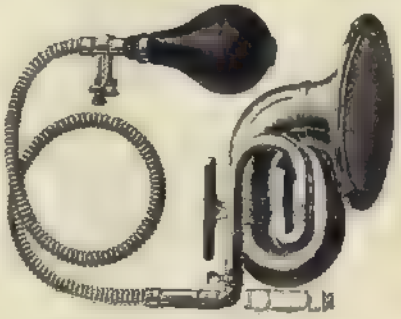

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A good discount to the trade

Send for our 208-page catalog, which contains illustrations and descriptions of all the standard equipments for the automobile. We do not handle freaks, but we carry in stock everything that is worth listing. Our prices are right, and our shipments are prompt. Once our customer, always our customer.

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E. & J. 1906 Lamps

Edmunds & Jones Manufacturing Co., 315 Riopelle Street, Detroit, Mich., are offering a very handsome line of lamps for 1906, and the besides a new gas generator.

The E. & J. Model No. 72 lamp is a head light for use with a separate generator and is

E. & J. Model No. 72.

provided with a parabola lens. This is a handsome style of lamp for large cars and is made in full polished brass in two sizes. Size A is 10½ inches long by 10½ inches high and the flange is 9½ inches in diameter. It is fited with a ¾ ft. burner. Size B is 11⅝ inches long by 11 inches high with 11 inch flange and has a 1 foot burner. A very convenient and practical feature of this lamp is the removable burner.

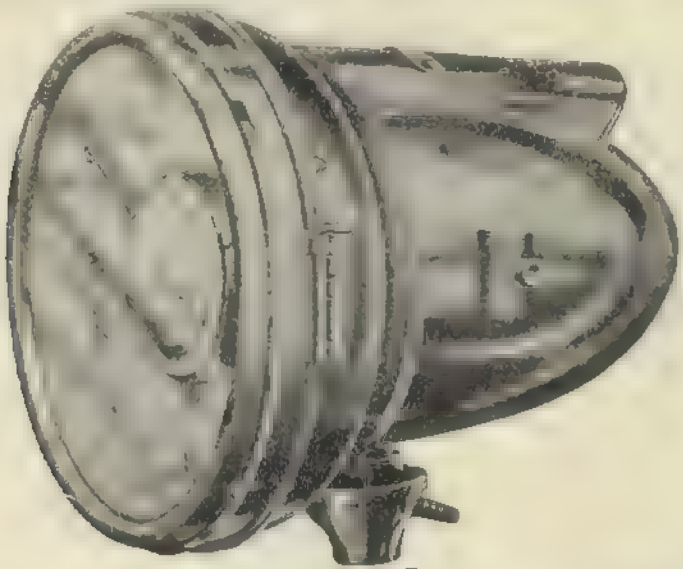
light reflector and is built on very symmetrical lines. This lamp is furnished in three sizes. Size E is 8½ ins. long by 9½ ins. nigh by 8⅝ ins. across the flange, being fitted with a ½ ft. burner. Size F is 10 ins. long 9⅝ ins. high by 9⅝ ins. across flange, and has a ⅝ ft. burner. Size G is 10½ ins. long by 10 ins. high and 10¾ across the flange, being fitted with a ¾ ft. burner.

Number 68 A is another separate generator lamp with parabola lens. The finish is also full polished brass. This lamp has a removable burner. It is 10 inches in both dimensions and has a 9½ inch diameter flange. The burner is ¾ foot.

Number 69 A has a lens mirror reflector and is made in full polished brass. This is a long rakish looking lamp of very neat design. It is 11½ inches long and 8½ inches high in front, sloping back in bullet shape. The flange is 9⅝ ins. in diameter and has a ⅝ foot burner.

Number 167 is equipped with a mirror search light reflector and finished in full polished brass. Three sizes of this style are offered. A, 9¾ inches long, B, 10 inches long, C, 10½ inches long, all 9½ inches high. The flanges are respectively 9, 9¾, and 10½ inches in diameter, and the mirrors 5, 6, and 7 inches in diameter. Size A has a ½ foot burner. Size B ⅝, C ¾ foot.

Number 167 is a search light with mirror lens reflector. Like the rest it is finished in full polished brass. It can be had in two sizes. Size A has a 6 inch mirror and is 12 inches long by 18¼ inches high, flange being 9½ inches in diameter. Size B is the same



E. & J. Model No. 70a.

Number 70 A is a bullet style lamp with parabola lens and removable burner. It is finished in full polished brass and can be furnished with a lens mirror reflector if desired. This lamp is 12 ins. long and 9¼ ins. high, flange 9 ins. in diameter, and a ⅝ burner is fitted.

Model 71 is fitted with a lens mirror search height and is one inch longer and has a one inch larger mirror and flange. Size A has a ½ foot burner and size B ¾ foot. This lamp is provided with a handle at the rear to shift its position and is mounted on a swivel bracket.

Number 66 is a lamp of plain design and one which is easily kept clean, having few

THE DRAW-BAR PULL OF BAKER ELECTRICS

Draw Bar Pull

WHEN someone tells you that the "DRAW BAR PULL" of an automobile is so and so, of course you know he refers to the number of pounds of energy required to move the automobile over a level surface like asphalt.

The Draw Bar Pull of an automobile is the real test of efficiency in other words, shows how easily it runs.

The Draw Bar Pull of **BAKER ELECTRICS** is one-half that shown by actual tests of other automobiles.

That is why the BAKER STANHOPE is equipped with only a twelve cell battery while others of similar type require batteries of twenty four or more cells yet give no better service in any particular. Why buy an electric with a large battery equipment when half the battery will do the work equally as well? Remember—the more battery the greater expense, the fewer the batteries the lower the cost to maintain, the less care the smaller expense in the eventual replacement of battery plates.

The greater the mechanical energy required to operate a motor car, the greater the weight required, and this means less satisfactory service more wear and tear.

The workmanship in **BAKER ELECTRICS** is the finest, the materials the best that money can buy. Every working part moves on a ball bearing. This insures utmost efficiency with the least possible motor strain. It insures satisfactory service at the lowest possible maintenance cost and practically no expense for repairs.

Every **BAKER** vehicle exhibits this same low "DRAW BAR PULL," and the same high rate of efficiency.

All **BAKERS** are superbly finished in the finest style of the carriage maker's art and the upholstery is the choicest. These are a few of the reasons that have prompted **BAKER** owners to call them

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Represented in all cities. Ask for Catalogue. **IMPERIALS, STANHOPES, SUBURBANS, SURREYS, DEPOT CARRIAGES, BROUGHANS** interior and exterior driven.

The Baker Motor Vehicle Co.,

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THE BAKER ELECTRIC STANHOPE

is, of all motor vehicles, the one most desirable, from every standpoint, for family and professional use.

For family use, it is especially adapted by its extreme simplicity and ease of operation. Any man, woman, or child can drive it after a few hour's practice. There is no troublesome cranking of a heavy motor, made doubly difficult in cold weather No loading with gasoline, oil and water, no trouble with spark plugs, and on account of their light weight, the danger of tire troubles, skidding, etc., is reduced to the minimum.

The Baker Stanhope is always ready for use at a moment's notice. The user merely turns on an electric switch, operates the control lever and away he goes with as great speed as may be legally used.

Baker Stanhopes being noiseless, free from grease and odor, and always immaculately clean, are ideal vehicles for the use of ladies when shopping, calling, or driving for pleasure, and they are so simple to operate that a chauffeur is an incumbrance. In addition, these

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These excellent features have enabled us to sell every machine we have made, early in the season, and obliged us to refuse orders.

Our line of vehicles comprises Imperials, Stanhopes, Surreys, Depot Carriages and Broughams (inside and outside driven), all superb vehicles, elegant and refined in every detail and with that high degree of mechanical excellence which has placed and keeps them in the front rank of the automobile procession.

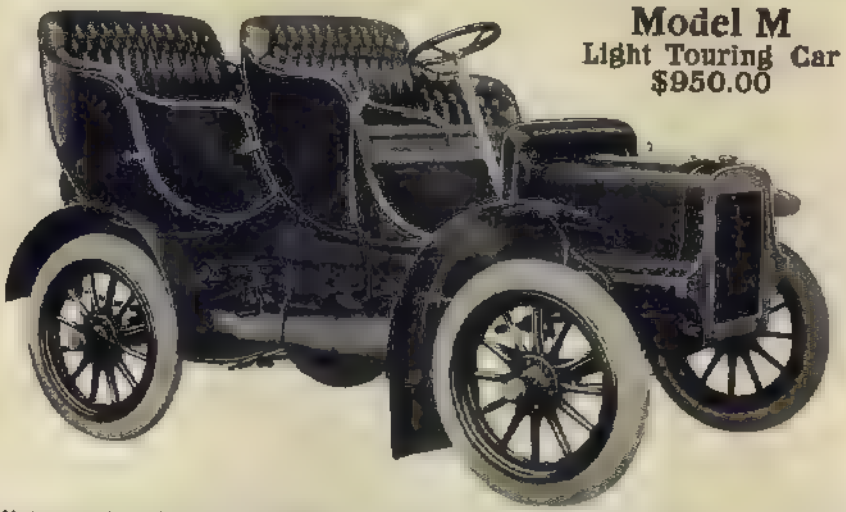
We desire agents in a few important cities not yet covered.

THE BAKER MOTOR VEHICLE COMPANY

18 Jessie Street, Cleveland, O.

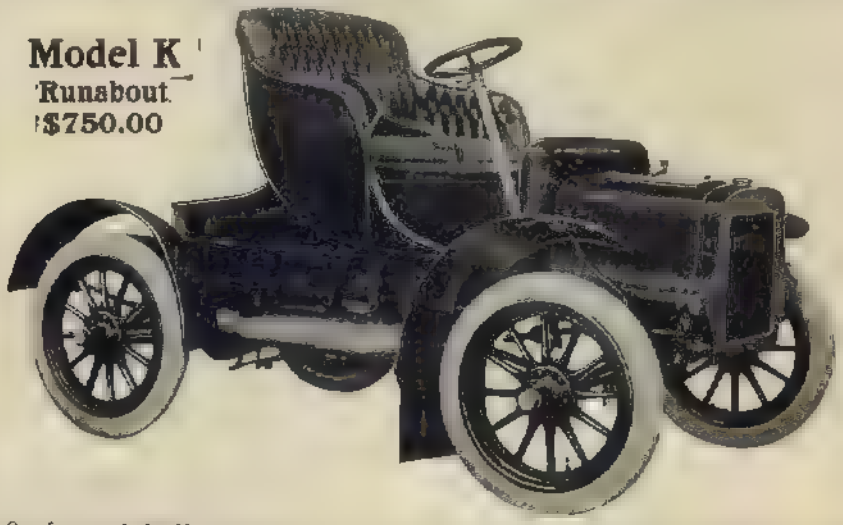
1906 SINGLE CYLINDER Cadillacs

Model M
Light Touring Car
$950.00



Motor, single cylinder, four cycle 5" x 5". Ten H. P. water cooled. Copper water jacket. Mechanical pump feed lubricator. Jump spark ignition. Planetary transmission, two speeds forward and reverse. Pressed steel frame, channel pattern. Brake on extra large differential drums. Chain drive. Force spring suspension, rocker joint on front spring, more than doubling spring efficiency. Wheel base, 76 inches. Tires, 30x3½ on Model M.; 28x3 on Model K. Bodies, Victoria pattern, striking y beautiful. Pressed steel hollow dash. Finish, purple lake (a deep, rich wine color) on body panels and doors with light carmine striping, dark carmine running gear. All parts thoroughly interchangeable. Cadillac quality throughout offering values never before equalled.

Model K
Runabout
$750.00



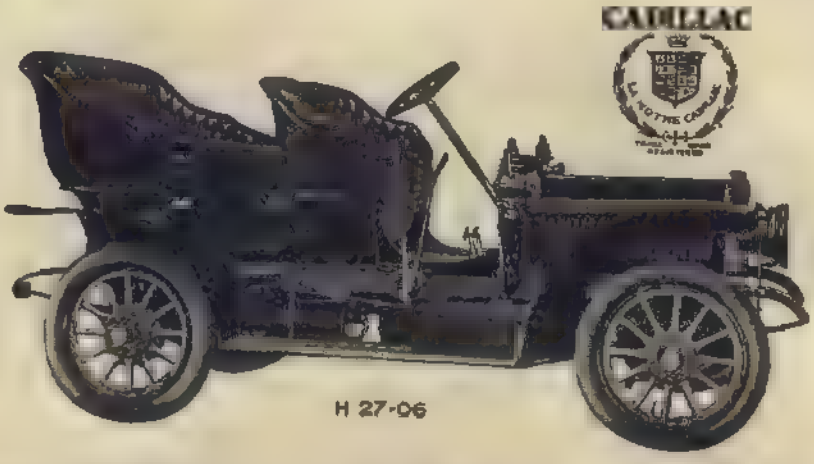
Our four cylinder line consists of Model H 30 H. P. Touring Car at $2500. Runabout at $2400 and Coupe at $3000. Also Model L 40 H. P. Touring Car at $3750 and Limousine at $5000. These will be announced in detail later.

Cadillac Motor Car Co., Detroit, Mich.

Members Association Licensed Automobile Manufacturers

Cadillac

MODEL H.
30 Horse Power



PRICE, $2500.00 F. O. B. DETROIT. (Lamps Not Included)

A car which not only upholds the reputation of "Cadillac Quality" but adds increased significance to that universally recognized standard of excellence

MODEL H. SPECIFICATIONS

Passenger capacity	Five persons
Wheel base	102 inches.
Wheels and Tires	32 x 4 "
Motor—Four cylinder	4½ x 5 "
Horse Power	30
Weight	2400 lbs.
Price	$2500.00 list.

DRIVE—Direct shaft with specially ground and hardened gears.

BEARINGS—Genuine Hess-Bright ball bearings throughout including axles, front wheels, transmission and engine thrust bearings.

TRANSMISSION—Cadillac planetary type, specially cut and hardened gears, three forward speeds and reverse.

STEERING GEAR—Our own new design, positive and reliable in its action.

BRAKE—Double acting expanding inside and contracting on drums on rear wheels. Sufficiently powerful to lock wheels almost instantly.

CONTROL—Remarkably effectual by instantaneously acting governor.

LUBRICATOR—Special Cadillac type, mechanical pump feed, quantity regulated by speed of engine.

COMMUTATOR—New and efficient design placed horizontally on vertical shaft with oil container

CARBURETOR—Special type for four cylinder motor, proven by exhaustive tests to be most effectual and economical

RADIATOR—Honeycomb pattern of great capacity and exceptional cooling efficiency.

SPRINGS—Semi elliptic front and three quarter elliptic rear, affording extreme ease and comfort.

BODIES—Exclusive Cadillac design of unusual elegance, upholstered in hand buffed leather over steel coil springs and genuine curled hair.

MODEL H. RUNABOUT

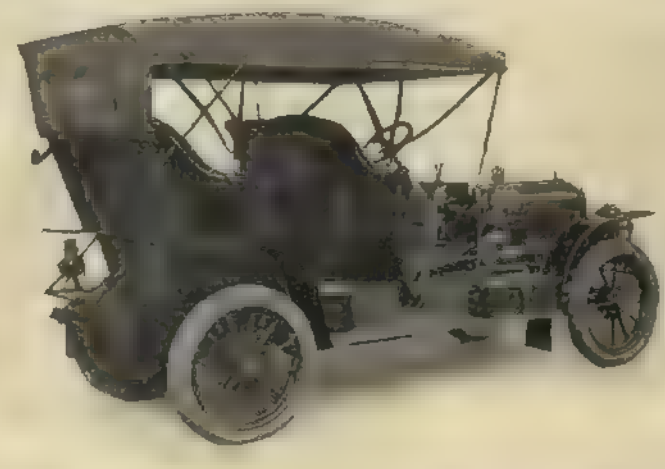
Same as above but with Runabout body, price ..... $2400.00 list.

Cadillac Motor Car Co., Detroit, Mich.

Members of Association Licensed Automobile Manufacturers

FRAYER-MILLER

The Sensational Car of 1905



Properly Cooled By Air

First American Six-Cylinder Car

An **Unqualified** Success.

TWO MODELS

Four Cylinder, 24 H. P., 2,000 lbs., $3,000. Six Cylinder, 40 H. P., 2,500 lbs., $4,000.
Cylinders, both cars, $4\frac{1}{16}$ x $5\frac{1}{2}$ inches.

RECORDS

3202 Miles in 6 days, 15 hours, 29 minutes. 1866 miles without a stop.

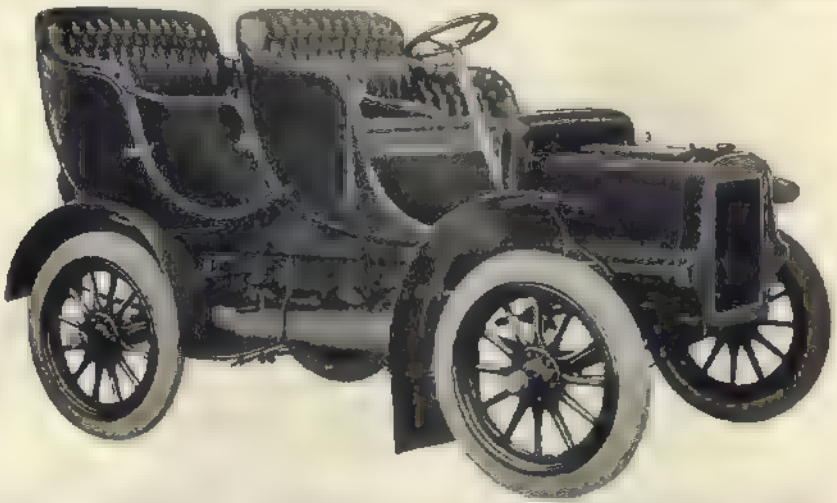
UNBEATEN.

Oscar Lear Automobile Company, Columbus, O.

Frayer-Miller Automobile Co., 941 8th Ave., New York

CADILLAC Maintenance

Cadillacs Have the Reputation of Being the Most Economical Cars to Maintain. Here's One of the Reasons



Cadillac Model M $950.00

ALL parts including those of the motor are made according to our system of limit gauges. No piece is permitted to pass inspection if it exceeds the prescribed limits of measurement, which in some cases are specified to the one-thousandth part of an inch. That is why they are right, and that is why, when for any reason it becomes necessary to replace a part, that it can be ordered with the assurance that it will not require altering to fit and can be easily installed.

We cannot offer the argument to dealers that repairs on CADILLACS will pay running expenses, so that profits on sales will be "all velvet."

Our catalog explains why the CADILLAC is **the car** for the dealer and **the car** for the motorist.

CADILLAC MOTOR CAR CO., DETROIT, MICH.

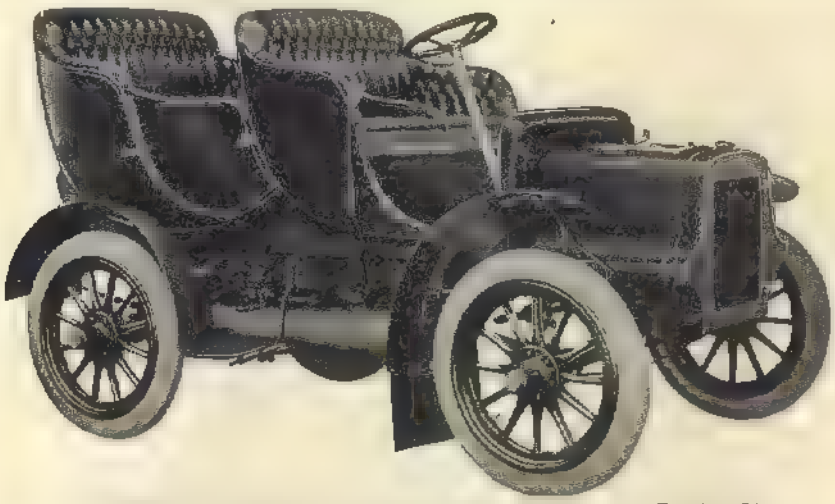
Members Association Licensed Automobile Mfrs.

CADILLAC Secrets

Efficiency **Accessibility**
Simplicity **Economy**
Durability **Interchangeability**

and

"VALUE RECEIVED"



Cadillac Model M, $950.00 F. O. B., Detroit

IN no motor cars are these virtues so evenly blended and well balanced as in the Cadillac, the car behind which stands the largest automobile manufacturing organization in the world.

Every detail of the Cadillac has been brought to the highest state of perfection that genius and skill have been able to accomplish.

Cadillac drivers are enthusiasts because they get all there is in motoring—except the troubles.

Ask any Cadillac owner, preferably one whose experience has not been confined to the Cadillac alone.

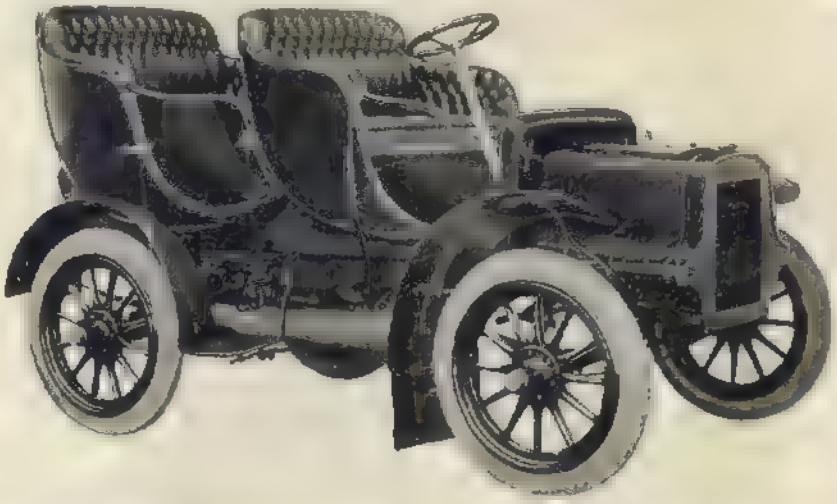
CADILLAC MOTOR CAR CO., DETROIT, MICH.

Members Association Licensed Automobile Mfrs.

CADILLAC Model M

$950.00 F. O. B. Detroit

The worthy successor of our 1905 Model F, of which more were made and sold than two other models combined.



The following letter is one of many which shows WHY

Cuba, N. Y., January 30, 1906

Cadillac Motor Car Co.,
Detroit, Mich.

Gentlemen. September 1st, 1905, I purchased from the Centaur Motor Co., Buffalo, N. Y., one Model F Cadillac This machine I have used for livery and have made upwards of 2000 miles. It has not caused one moment of trouble or one cent for repairs. It has made all the hills in this section, which are very bad, with perfect ease, no matter what the load might be. When I purchased the machine I did not know any more about it than a boy of ten years, but found it to be very simple in every detail.

I cannot speak too highly of the Cadillac. It is certainly a winner.

Respectfully,
F. L. HALLACK

Is it any wonder that Cadillacs sell?

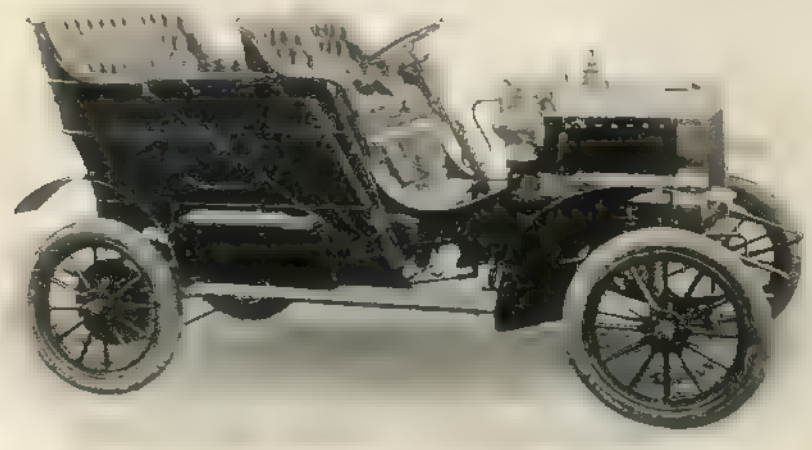
CADILLAC MOTOR CAR CO., DETROIT, MICH.

Members Association Licensed Automobile Mfrs

THE LAMBERT

The Famous Friction Drive Car

Guaranteed **ONE YEAR.** This is proof of their superior construction, models and styles to suit the purchaser. Immediate deliveries.



MODEL "5," PRICE $1200

A Low Priced, High Grade Touring Car, Perfectly Equipped and Finished. Write us for our Catalogue of

Pleasure Cars, Runabouts and Touring Cars,

and Commercial Trucks

Prices: $900.00 to $3000.00

We have a few attractive agency propositions open where we are not represented. **Write for particulars.**

The Buckeye Manufacturing Company

ANDERSON, INDIANA, U. S. A.

Member American Motor Car Manufacturers' Association

A Big Purchase

of Cleveland, Crescent and Monarch

Chainless Bicycles

ALL BRAND NEW

Ladies and Gents Models

We have bought from the Pope M'f'g. Co. all of their celebrated **Cleveland, Crescent and Monarch Chainless Bicycles AT OUR OWN PRICE. WE OWN THEM ALL.** Write for prices quickly.

They Won't Last Long

We carry a full line of Bicycle Sundries

EVERYTHING

FOR THE

AUTOMOBILE

Get our prices before ordering elsewhere.

Manhattan Storage Co.

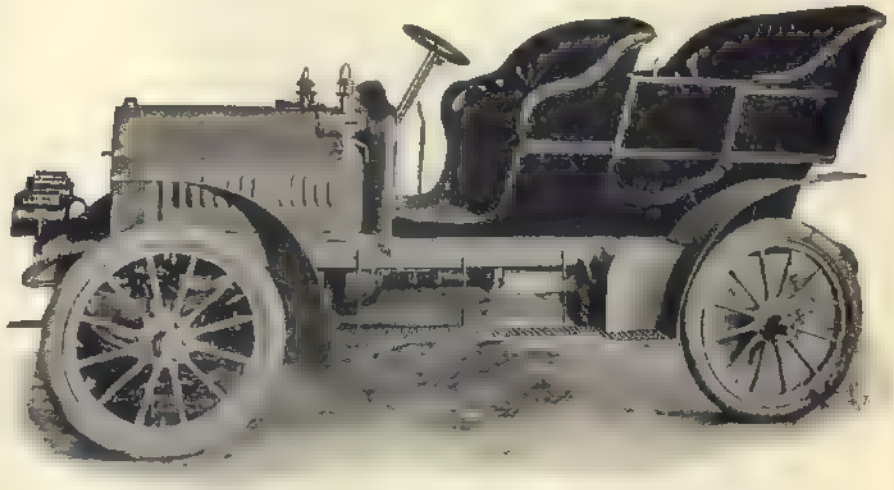
42 Cortlandt St., - - New York City.

DO NOT GO TO EXTREMES

When you buy an automobile, it will pay you to be conservative. Wise buyers select the

CRAWFORD

because it is the "happy medium" car.



24—28 H. P. 4 Cylinder. Price, $2,000

The **CRAWFORD** is the "just right" automobile, because it is

Not too high in price,—	Not too low in price
Not too much power,—	Not too little power
Not too much weight,—	Not too little weight
Not too large,—	Not too small

It is practically the one car of its type in America, and the price at which it sells, $2,000, makes it purchasable by all who seek a practical touring car. Do not try to save a few hundred dollars by buying an out of date two cylinder car, nor do not waste a few thousand dollars trying to buy a large, heavy automobile which costs a fortune to maintain.

The **CRAWFORD** is the "happy medium," and gives universal satisfaction.

Crawford Automobile Co.

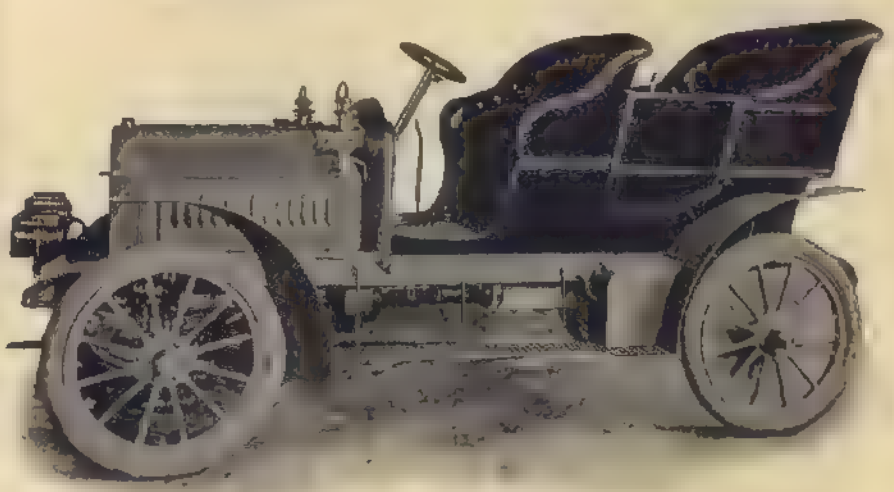
HAGERSTOWN, MD.

Agents for New York and vicinity, NEW AMSTERDAM MOTOR CO , 152 W. 56th St.

Boston Automobile Exchange, Boston, Mass.
North Philadelphia Automobile Station, Philadelphia, Pa.
C. P. Warner & Co., Chicago, Illinois. Chas. W. Buckley, Worcester, Mass.
Woodward & Heopell, Springfield, Mass. Geo. W. Bender, Waynesboro, Pa.
Wm. H. Ennis, Cumberland, Maryland.

Every Man Who Buys a touring car this year should see that he gets a four cylinder model. All other types are out of date.

THE CRAWFORD meets all requirements. It is a four cylinder car, high power, high quality, but low price.



24—28 H. P. 4 Cylinder. Price, $2,000

It is practically the only car of this type in this country selling for $2000.00, because the construction, material and workmanship are that of a higher-priced automobile. Our experience and facilities, together with our willingness to accept a moderate profit enable us to place this superior car on the market at a price which makes it possible for all buyers of touring cars to own a **CRAWFORD.**

Crawford Automobile Co.

HAGERSTOWN, MD.

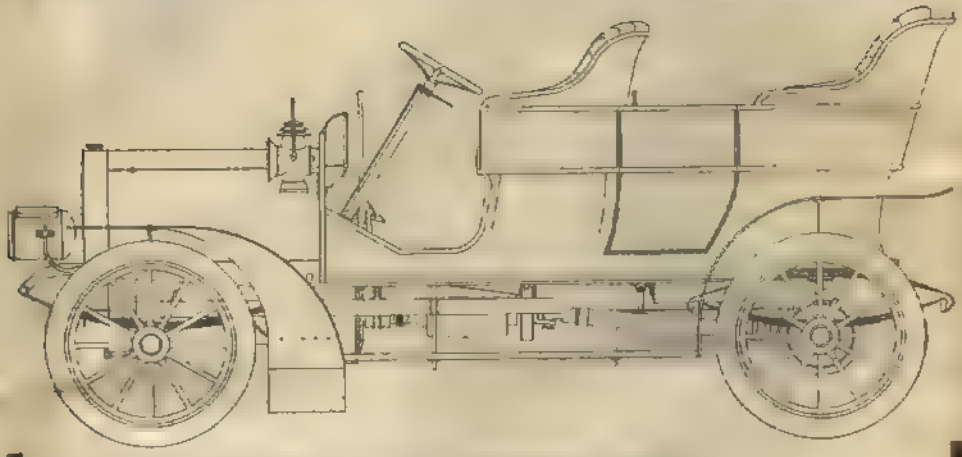
Agents for New York and vicinity, NEW AMSTERDAM MOTOR CO., 152 W. 56th St.

Boston Automobile Exchange, Boston, Mass.
North Philadelphia Automobile Station, Philadelphia, Pa.
C. P. Warner & Co., Chicago, Illinois. Chas. W. Buckley, Worcester, Mass.
Woodward & Reopell, Springfield, Mass. Geo. W. Bender, Waynesboro, Pa.
Wm. H. Ennis, Cumberland, Maryland.

DEERE

— 1906 —

Type "A" Price, $2,000.00



"STARTS FROM THE SEAT"

24 H. P. 5 Passenger Touring Car

The **"Deere"** embodies many pleasing features not found in other cars of the same price.

While enjoying a demonstration the **"Deere"** disc clutch and shock eliminator will prove their merit.

For further information and prospectus

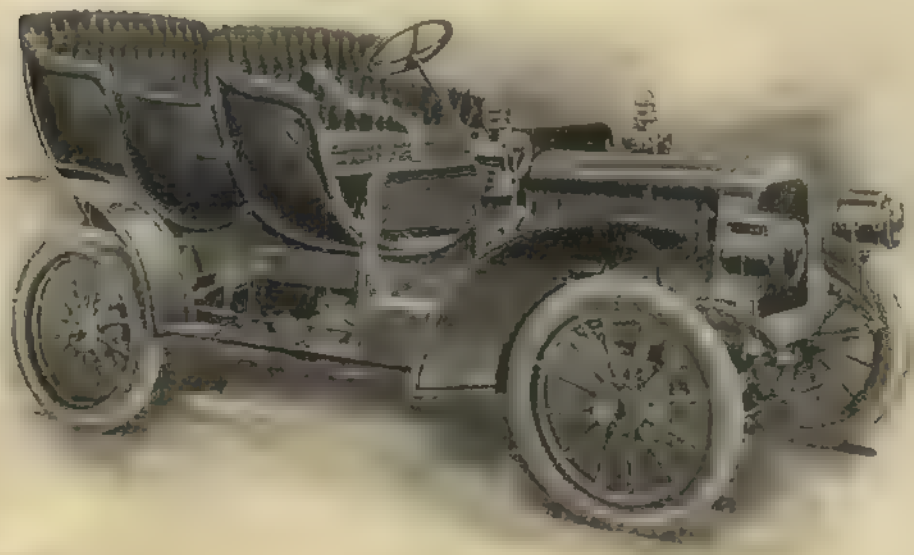
Address the

Deere-Clark Motor Car Co.,

MOLINE, ILL.

C. H. Deere, Pres. **W. E. Clark, V. Pres.** **C. F. Drury, Secy. & Mgr.**

E. Met[illegible] Wis
2 D[illegible] st Street
Ra[illegible]ne, Wis. Phone 3404



Touring Car Model "K," $2000.00

THE QUEEN

The Big 1906 Queen is a Queen for Fair

Motor Power, 23 to 28
No. Cylinder, 4 Vertical
Wheels, 32 x 4
Transmission, Sliding Gear
Speeds, 3 Forward and Reverse
Front Axle, Solid Drop Forging
Frame, Pressed Steel
Wheel Base, 101 inches
Batteries, Storage
Equipment includes five lamps
Horn and complete set of tools

We also have a handsome two-cylinder 18 H. P. Touring Car with detachable side door tonneau listing at $1100.00, and a two-cylinder 14 H. P. Runabout listing at $800.00.

New York Agency: The Majestic Automobile Co
Cor. 54th and Broadway
Chicago Agency: The Branstetter Motor Co.
1337 Michigan Avenue
O. G. Roberts & Co., 114 N. Ninth Street, Columbus, Ohio.
Frebert Gas Engine Co., 183 Main St., Rochester, N. Y.
Karig Auto & Garage Co., 838 Folsom Street, San Francisco, Cal

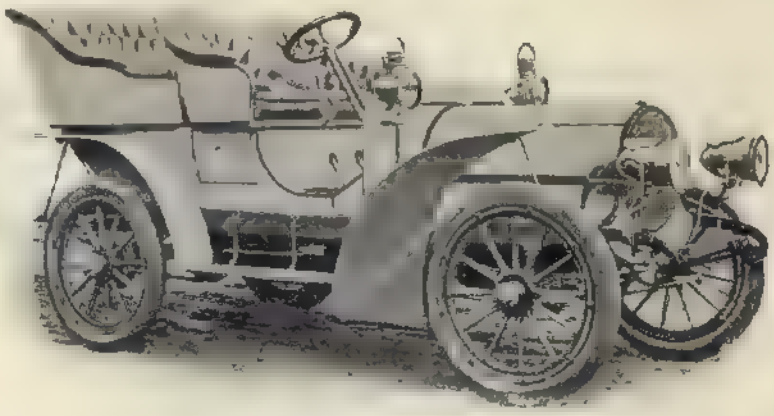
We will exhibit at the Boston and Detroit Shows.
Write us for Agency Proposition and Catalog giving full particulars

The C. H. Blomstrom Motor Co.

Detroit, Mich.

Something Different
Something Better....

∴DUQUESNE.∴



4 Cylinder Air Cooled, 16-20 H. P.
Weight 1750 lbs, Price $2,000.

A marvel of simplicity. Build right, stays right, seats 5 passengers Speed 3-40 miles per hour. Many exclusive features of great importance. Starts from seat, no crank necessary, a foot lever does it.

Specifications

Transmission, Planetary. all spur gears running in oil. Suspension, three point flexible.
Drive System, direct drive by band gears and Duquesne triangular system.

For further particulars and agency terms, write to the

Duquesne Construction Co.,
Jamestown, N. Y.

The Jones Speedometer for *This* reason—

The **JONES ODOMETER** movement, **unlike those used by other manufacturers**—who are, we might say, mere assemblers of speed and distance indicators, **is not an extraneous attachment to the side, top or bottom** of a speed device, but is a specially-designed movement for the purpose, and is manufactured in our own factory, forming an integral part of a symmetrical whole.

The dial figures are larger and more easily readable than on any other device, and they move into position with **business-like snap and precision.** No getting stuck half way; no stopping while the car is running; no gaps in registration. The Season mileage registers to 9999 9-10. The Trip mileage to 99 9-10. Miles in **black** figures, tenths of miles in **red.**

Distance is registered cumulatively whether the car goes forward or backward. No other odometor has this important feature

The Trip mileage register is reset by simply pushing the setting stem; the figures **instantly** snap to zero. This feature overcomes the primitive method of turning and twisting the stem as in other makes.

Many additional features shown in our complete catalog; free upon request.

JONES SPEEDOMETER
124 West 32nd St., N. Y.

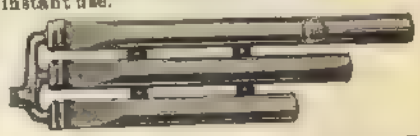
The Gabriel Horn

From the tinkle of a bell to the discordant shriek of a foghorn, noises of every sort have been employed as warnings for the use of automobiles.

The warning blast from a GABRIEL HORN is thoroughly efficient yet its tones are so agreeable that it is really a pleasure for a pedestrian to get out of your road when you ask him in the GABRIEL way.

GABRIEL HORNS are made with two, three, four and eight ohimes.

They are blown by exhaust pressure operated by a foot lever, are out of your way and as they have no bulbs, tubes or reeds to get out of order, they are always ready for instant use.



Foster Shock Brakes

act as a cushion for your automobile on the down thrust or recoil when you run into a hole or over a bump in the road.

They prevent a sudden drop or a quick, spring-breaking and back-wrenching recoil.

FOSTER SHOCK BRAKES absolutely eliminate the vicious jar and jolt occasioned by rough roads and make riding an unalloyed pleasure, reducing to the minimum the possibility of injury to machinery and tires.

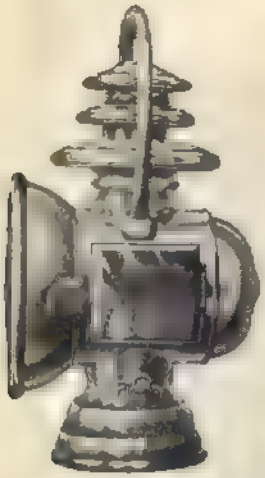
A set of FOSTER SHOCK BRAKES costs $30.00 and you will save their cost several times over in a season by the saving in repair bills. Then think of the comfort.

Sold by all live dealers. Catalog for the asking.

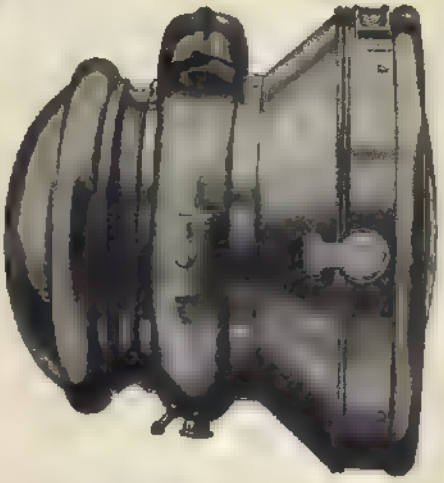
Gabriel Horn Mfg. Co.
977 Hamilton St. Cleveland, Ohio

GRAY AND DAVIS

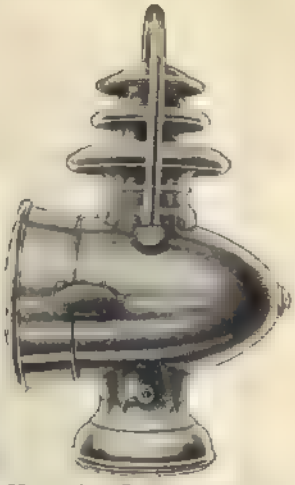
LATEST HIGH-GRADE DESIGNS



No. 29. Large, Massive Oil Side Lamp for Large Touring Cars.

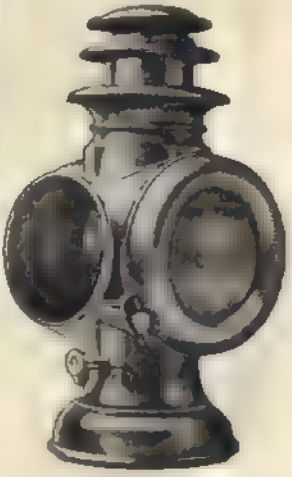


No. 50. Headlight for Medium Size Touring Cars.
No. 55, Headlight for Large Size Touring Cars.
No. 56. Headlight for Extra Size Touring Cars.



No. 26. Large Oil Side Lamp for Large Touring Cars.

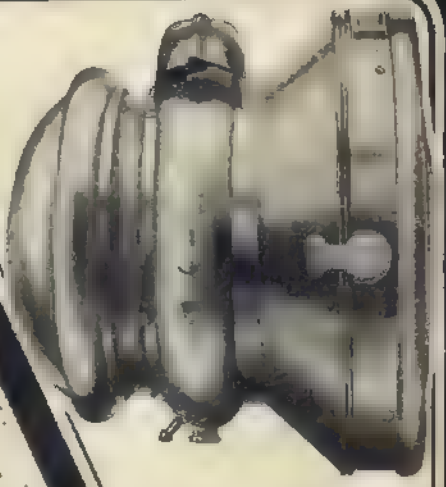
No. 19. Oil Side Lamp for Medium Size Touring Cars.



No. 17. Tubular Oil Tail Lamp for Large Touring Cars.

GRAY & DAVIS, Amesbury, Mass., U. S. A.

GRAY & DAVIS



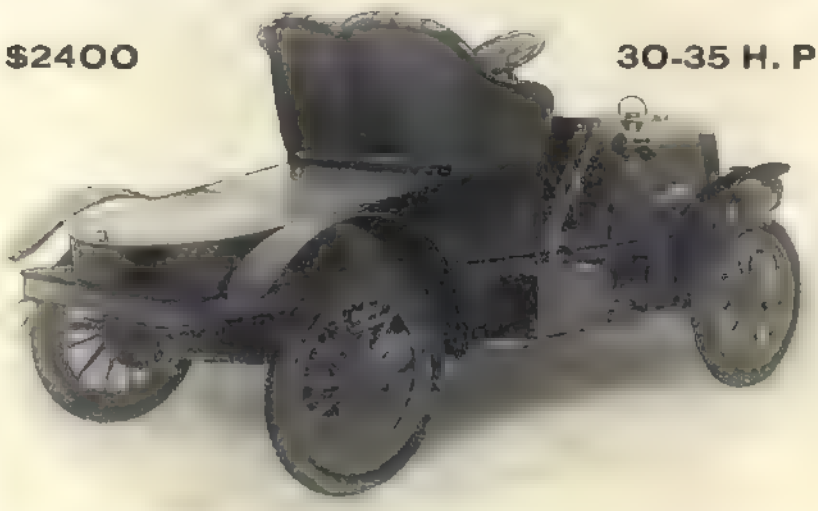
Standard of the World

Amesbury, Mass.

GRAY & DAVIS
LAMPS
STANDARD OF THE WORLD

GROUT

$2400 30-35 H. P.



GROUT GASOLINE RUNABOUT

THEN 1896 | ESTABLISHED 1896 | Ten Years' Experience Joined with Common Sense | NOW 1906

If you require the Best Car the market can produce for Quality and price we invite your inquiries.

GROUT BROS. AUTOMOBILE CO.,

ORANGE, MASS.

Agencies:

MUNSING & CHAPMAN
1856 Broadway, New York

A. T. WILSON
1558 Broadway, Denver, Col

L. D. TAYLOR
Brattleboro, Vt.

20th CENTURY MOTOR CAR CO.
1421 Michigan Avenue, Chicago, Ill.

WHITNEY & CONVERSE
Winchendon, Mass.

GROUT BROS. AUTOMOBILE CO
H. W. LANSING Manager
311 Third St., S., Minneapolis, Minn.

J. A. PETREE
New Haven, Conn.

CURTIS, HAWKINS CO.
Motor Mart, Boston, Mass

H. K. DODGE
Glen Cove, N. Y

P. H. JOHNSTON CO
207 Halsey St., Newark
N. J.

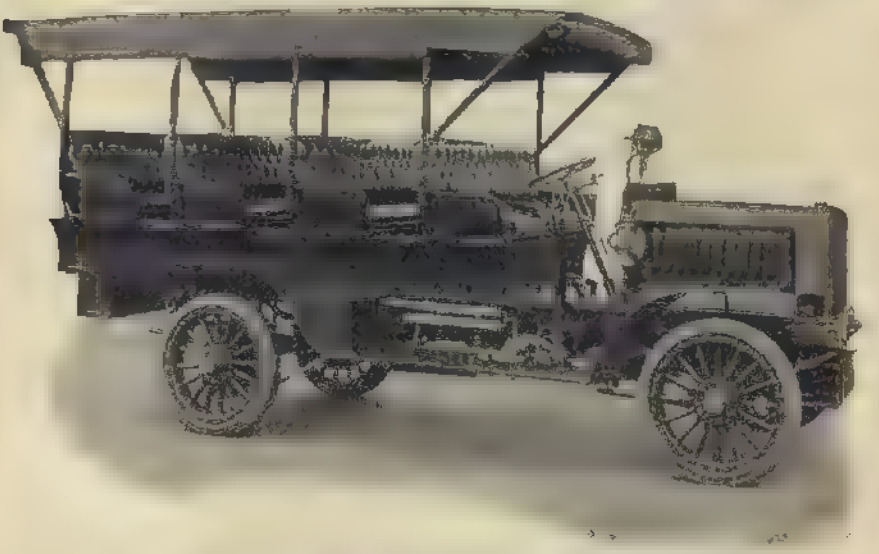
HELMET OIL

ALL BEARINGS PACKED WITH HELMET OIL REQUIRE ATTENTION AT LONG INTERVALS ONLY

CHARLES H. BESLY & CO. 15-17-19-21 S. CLINTON ST. CHICAGO ILL. U.S.A.

Iroquois Truck

Built Like a Locomotive



Standard Iroquois, 60 H. P. Chassis, Equipped with 15 Passenger Body

Our years of experience in heavy work especially adapts us for manufacturing trucks that cannot be surpassed for reliability and durability. We manufacture also automobiles for railroad use, built along the lines of locomotives for construction and strength with capacity for from 30 to 50 passengers.

We are ready to make deliveries on short notice of our 25 H. P. 4 Cylinder 3½ ton Truck.

25 H. P. 4 Cylinder 20 Passenger stage.

We can interest business men because our trucks are an economical commercial proposition. Increased capacity decreased cost of operation make Iroquois trucks more desirable than horses.

IROQUOIS IRON WORKS

BUFFALO, N. Y.

Sales Department—G. MIDDLETON, 1900 Land Title Bldg., Philadelphia, Pa.

GROUT

$2500.00, 30-35 H. P. Including top; headlights with generator, two oil lights, horn, full set of tools with tire repair kit.

GROUT BROTHERS AUTOMOBILE CO.

ORANGE, MASS.

New York Agency—Messrs Munsing & Chapman, 1855 Broadway.
Chicago " —The 20th Century Motor Car Co., Michigan Avenue
Boston " —Paul R. Curtis Co., Motor Mart, Park Square.
Denver " —A. T. Wilson, 1558 Broadway

Trade Items

"Orient Spray" is a disinfecting and deodorizing compound put up by the Orient Chemical Co., 1109-10 Oliver Bldg., 141 Milk St., Boston, Mass., for cleaning oil or grease spots from the wood or metal parts of automobiles, motor boats, etc., and will restore the original finish on any painted, varnished or shellacked woodwork. It is also an excellent metal polish.

M. Caffery Leather Co., 39 and 41 Oliver Street, Newark, N. J., are manufacturing patent and enamel leather, their line including machine buffed enamel top, and bow leather, and fancy machine buffed leather of all colors. These leathers are very high grade and are being used by some of the largest motor car makers in the country.

The Lozier Motor Co., 1 Broadway, New York, N. Y., will henceforth equip their Type D. 40 H. P. automobiles with two separate sets of ignition so that one set could be used in case the other became disabled. One set will consist of spark plugs, connected to a Remy or Simms-Bosch magneto, on one side of the motor in covers fitted above the inlet valves. The other set consists of independent plugs, connected to storage battery accumulators and distributors, in the valve covers of the exhaust valves.

O. F. Zurn, 23 and 25 South 5th St., Philadelphia, Pa., are manufacturing an oil for automobiles and power boats which they term "Zurnoil." It is made in three different weights, No. 1 being a heavy, viscuous, cherry-colored oil, for steam automobiles and motor boats; No. 3 a deep red oil of high viscosity, for air-cooled gasoline machines and those partly cooled by water; No. 4, lighter in color, but not so heavy as No. 3, for water cooled gasoline and electric machines. It can also be used as an engine oil for steam machines.

The Hartford Automobile Parts Co., 438 Asylum St., Hartford, Conn., was recently incorporated to manufacture and deal in high grade motor car parts, such as are now made by car manufacturers themselves, and who might prefer to purchase such parts. The first product will be a new type Cardan joint, on which patents are pending. The officers are: President and Treasurer, E. A. Bardol, of Hartford; Secretary, A. J. Broughel, of Hartford; Vice-President and Manager, F. H. Bogart, of New Britian, formerly associated with the Corbin Motor Vehicle Corporation as chief engineer.

Newmastic Tire Co., of St. Louis, Mo., have just established a new branch in New York City, which is the fifth branch now in operation under this company. The growth of their business has been very rapid, having started in a small shop in St. Louis three years ago and now having these five branches in operation in different parts of the country. This company makes a tire filling which is used instead of air; keeping the tire up, and it is claimed not lessening its resiliency. From the healthy growth of their business it would seem that their work and material are giving entire satisfaction.

THE JEWELL A PERFECT CAR FOR $400.00.

8 full H. P. WaterCooled. Planetary transmission Jump Spark Ignition. Full Elliptic Springs. Rolled Steel Frame Steel Axles. Two speeds forward with reverse.

The Features
The Price.
Ample Power.
Speed with Safety.
Perfect Control.
Simple Construction.
Easy Operation.
Economical Maintenance.

ONE HUNDRED THOUSAND people have said "If I could buy a car for about $400.00 that would do my work and which I could operate myself with safety and take care of without the assistance and expense of an expert mechanic, I would buy a car."

The JEWELL is built to meet the wishes of these people. It will positively meet all the requirements of business and professional men. Descriptive catalog on request.

THE FOREST CITY MOTOR CAR COMPANY, Massillon, O.

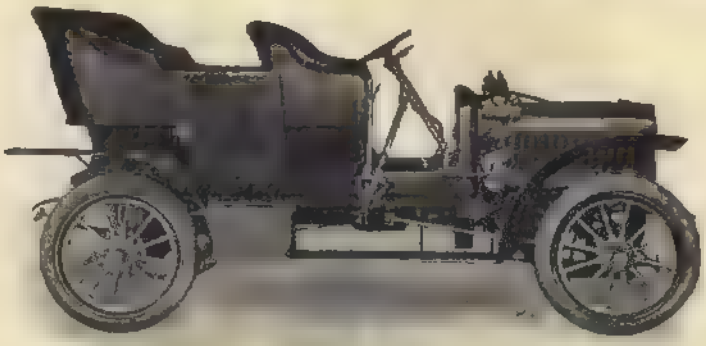
TURNING THEM OUT

—not by the mile, nor by the hundred—but one at a time—three times a week. That is how uniformly high-grade construction is assured in The Lozier Motor Cars. And each car is perfect or it would not be turned out—it would be turned down. We spent nineteen months in the most thorough y exhaustive experimenting before we completed our first car, which appeared in August, 1904, and added to our sum of knowledge for ten months more before our first delivery was made—in June, 1905; and we felt then, as others are realizing now, that our tireless efforts to produce the very best before it was given to the public had landed us at the first jump right at the top, with a car that is so vastly superior to any other American make, and so certainly the equal of the best of the foreign product, that, with a few other American manufacturers following the Lozier lead, the day of the foreign motor car in the American market will soon be over. Too great haste in building, and an overmastering desire for quick returns and large profits, have not given American workmanship a chance to assert its superiority. We were in no haste to announce The Lozier Motor Cars, nor are we in a hurry about turning them out—we are not slow by any means, we are merely sure—for The Lozier kind of high-grade construction demands time and care. We have said that Lozier Motor Cars are equal to the best of the foreign product—we might go further and assert that they are better—for if they are equal to them in every other point and superior to them in at least one, it follows that The Lozier Motor Cars are the best in the world—and in the hardened and ground crank-shaft (turned, hardened and ground on its own centers), we claim a superior point in correct construction that is not to be found in any other car—foreign or domestic. We have other points besides. In price, our Limousines, Landaulets and Touring Cars are comparatively high—and they ought to be; for they cost money to build—as we build them—and good construction is everything. Call and see them at our New Building, 56th Street and Broadway, New York City, and at the Automobile Show, Sixty-ninth Regiment Armory, January 13th to 20th, 1906.

LOZIER

THE LOZIER MOTOR CO.

MOLINE



Three Models

Model "C"
Light Touring Car
18-20 H. P., $1750.00

Model "A"
Touring Car
30-35 H. P., $2500.00

Model "G"
Touring Runabout
16 H. P., $1000.00

The **Moline** line of automobiles is winning widespread popularity. Every essential feature of the best automobiles on the American market is to be found in **Moline** cars, at prices which are not prohibitive. They will give the longest service with the least trouble. As an investment for the individual or a selling proposition for the dealer, they are unexcelled.

Write for detailed descriptions.

Moline Automobile Company, East Moline, Ills., U.S.A.

New York—Automobile Exchange & Storage Co., 153-59 West 38th Street
Boston—C. H. Saunders, "Motor Mart
Cleveland—Hipp, Reitz & Hall Automobile Company, 251-255 Viaduct
Minneapolis—Walter G. Benz, 316-322 Fourth Ave., South
Los Angeles—Wm. Gregory, 602-609 North Main St.
Milwaukee—M. E. Watt
St. Louis, Mo.—Union Auto Co.

Absolutely Accurate AT ALL SPEEDS

Mr. Motorist, there's a world of satisfaction (to say nothing of safety) in knowing FOR SURE just how *fast* you are going and how *far* you have gone, without the slightest Doubt or Guesswork about it.

There is just one way to KNOW this absolutely —only *one*—and that's to equip your car with

The Warner Auto-Meter

Registers Speed and Distance:

This little instrument always *tells the truth.* It registers with ABSOLUTE ACCURACY from ¼ *mile* to 60 miles per hour, It attaches to any Automobile made.

The Warner Auto-Meter is the only speed indicator which is sensitive enough to be absolutely and unfailingly accurate at *speeds under 10 miles in hour.*

It's the only one which works perfectly in *all positions* and at *all angles,* on rough roads or smooth, up hill or down.

It's the only one which changes with the *speed alone* and not with the indicator lives nor it or back and forth from the jar of the car.

Because the Warner Auto Meter is the only speed indicator which is actuated by the same *fixed, unchangeable Magnetism* which rules the Mariner's Compass reliable and dependable FOREVER under all conditions.

No one else can use Magnetism to determine the speed of an Automobile, though it's the only *positive* and *sure* way. Because there is just *one way* in which Magnetism can successfully be used for this purpose and *we have Patented that way.*

There is nothing about the Warner Auto-Meter which can give out, wear out, or get out of adjustment. It is the only speed indicator made without cams, plates or levers, and in which there is *no sliding friction.* Friction wears away the cams and levers in other speed indicators, which are necessarily so small that *1-1000 of an inch* wear will throw out the reading from *one to five miles* per hour

One Warner Meter will last a lifetime. It is as sensitive as a Compass and as *Set and Forget* otherwise it couldn't stand our severe service test which is equivalent to a trip of

160,000 Miles at 50 Miles Per Hour on Granite Pavements Riding Solid Tires.

Figure 1 shows how this test is made. The wheel connection of the Auto-Meter is attached to a shaft running 200 revolutions per minute. Across this shaft lies a plank of hard wood, which is hinged at one end and has the Auto-Meter attached to the other. Braced to the shaft is a knife edge which at every revolution hits the plank, giving to the Auto-Meter 200 shocks per minute were it possessing a speed of 50 miles an hour. Each one of these shocks is more severe than would be suffered in an entire season's riding After running 10 hours a day for THREE MONTHS, actual tests show the Auto-Meter to be recording the speed with the same accuracy as at the start—not 1 per cent or less than 2 miles per hour. NO OTHER SPEED INDICATOR COULD STAND THIS TEST.

Figure 1

This is why we sell each Auto-Meter on a

10 Years Guarantee

and why we gladly renew any Auto-Meter which has not been injured by accident in which the Magnet (the Heart of the meter) is less accurate than 1-10 of 1 per cent after 10 years use.

The cost of an Auto-Meter is nothing to a man who can afford $1000 for an Automobile. It adds a feeling of absolute certainty and perfect security worth many times the price.

We will gladly tell you more about this wonderful instrument if you will write us and at the same time will send you something very useful which will prove of

FREE BOOK "AUTO POINTERS."

Don't GUESS yourself into trouble If you are interested in KNOWING you are right when you go ahead, the Warner Auto-Meter will tell you *truly* year in and year out Write for particulars TODAY—don't put it off

The Warner Instrument Co., 158 Roosevelt St., Beloit, Wis.

(The Auto-Meter is on sale by all first-class dealers and at most Garages.)

This is the Pierce Great Arrow 28-32 H. P. with straight tonneau body, cape top and folding glass front. Price without top or glass front, $4,000. Cape Top, $200 extra. Folding glass front, $60 extra.

THE PIERCE ARROW

is a car whose final destination is neither the scrap heap nor the machine shop. There are probably more Pierce Arrows of old models now in satisfactory use than any other make of car. A Pierce Car of several years back is a better investment than many 1906 cars.

The greatest obstacle to the ownership of an auto to many people is the cost of maintaining—not the ordinary garage charges, but the far greater expense of repairs, adjustments and the like. Even if you do not mind the cost of these, the annoyance and delay when a car breaks down takes away from the pleasure of operating it.

In the famous Glidden Trophy run the Pierce Arrow went one thousand miles without a single adjustment. More than that, it did not require an expert chauffeur or mechanic to do this. The performance can be duplicated by any American gentleman with a Pierce car.

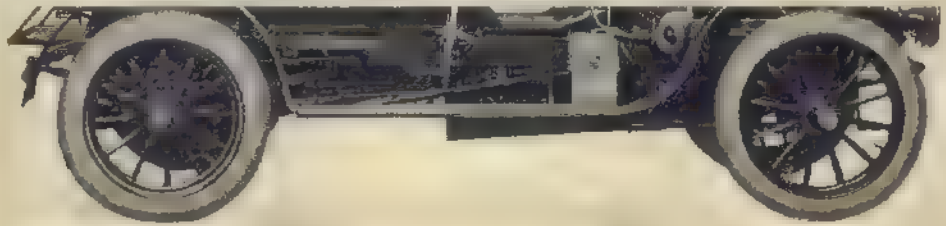
If you are interested, we will send booklets and technical descriptions.

THE GEORGE N. PIERCE COMPANY, Buffalo, N. Y.

Members Association Licensed Automobile Manufacturers

LIST OF DEALERS

BALTIMORE, MD.—Sun Motor Auto Co., 3021 Maryland Ave.
BOSTON, MASS.—J. W. Maguire Co., 345 Boylston St.
BUFFALO, N. Y.—The George N. Pierce Co., 472 Main St. Retail.
CHICAGO, ILL.—Hay Foss & Co., 220 Michigan Ave.
DENVER, COLO.—The George N. Pierce Co., 615 California St.
DETROIT, MICH.—[illegible], 69 Jefferson Ave.
[illegible], N. Y.—J. A. Place.
HARTFORD, CONN.—The Motor Garage Co., 20 Asylum St.
HOUSTON, TEX.—Hawkins Auto & Gas Eng. [illegible]
KANSAS CITY, MO.—K. P. Moriarty Co., 45 Grand Ave.
LOS ANGELES, CAL.—Smith & Barker, Cor. 7th and Main Sts.
LOUISVILLE, KY.—The Zorn Motor Car Co., Inc.
MILWAUKEE, WIS.—Gilbert Automobile Company.
MONTREAL and TAWA, CAN.—[illegible] 42 Bank St.
NEW YORK, N. Y.—Herbert Motor Car Co., Broadway, 39-59th Sts.
OAKLAND, CAL.—The George N. Pierce Co., 1014 Clay St. Wholesale.
PHILADELPHIA, PA.—Pote-Hughes Motor Car Co., 261 N. Broad St.
PITTSBURG, PA.—Banker Bros. Co., Baum and Beatty Sts.
PORTLAND, ME.—J. A. Dow & Co.
PORTLAND, ORE.—Covey & Cook Motor Car Co.
[illegible], R. I.—Tower Sheppard Company
ROCHESTER, N. Y.—G. B. Automobile Co., 23 Plymouth Ave.
ST. LOUIS, MO.—Western Auto Co., 4701 Washington Boulevard
ST. PAUL, MINN.—C. P. Joy Auto Co., 344 Minnesota St.
SAN FRANCISCO, CAL.—Mobile Carriage Co., Golden Gate Ave. & Gough St.
SARATOGA SPRINGS, N. Y.—W. L. Hodges, 18 Woodlawn Ave.
SCRANTON, PA.—Standard Motor Car Co.
SEATTLE, WASH.—Broadway Auto Co.
SHEFFIELD, PA.—C. H. Smith Co., Ltd.
SPRINGFIELD, MASS.—E. H. Clark Auto Co., 117 Lyman St.
SYRACUSE, N. Y.—Amos-Pierce Auto Co., 1093 S. State St.
TITUSVILLE, PA.—A. E. Lambert.
TORONTO, ONT.—Auto & Supply Co., Ltd., 34 Temperance St.
TROY, N. Y.—Troy Auto Exchange, 22 Fourth St.
UTICA, N. Y.—Utica Motor Car Company



Commander of Strenuous Service

We do not offer you the 1906 Thomas simply on the strength of its supremacy among American cars. We ask you to consider it upon its ability to outpoint in all-around excellence and efficiency the finest car made anywhere in the world.

It will "stand up" under any and all conditions. It is staunch, strong, rugged, powerful and the most beautiful car in the world.

Dependable and Safe

You should be sure that the Car you buy has these two elements, upon which depends all the comfort and satisfaction in automobiling. The two words DEPENDABLE and SAFE describe most accurately the four separate motors of THE 1906 50 H. P. THOMAS FLYER.

The practical use of many superior mechanical features has given the New Thomas Flyer a distinctive prominence throughout the automobile world. The strength of its motor construction has added RELIABILITY to the world-wide reputation, fastest and most powerful car in the world.

Motor Construction

The four separate cylinders are made of a special grade of close-grained iron. Both inlet and exhaust valves are mechanically operated, located on opposite sides of the motor. All valves are interchangeable. The cylinders being separate enable you to climb the steepest grades, or travel on the most crowded streets without change of gear.

In describing the Thomas Motor we will only touch on the points which are of vital importance for motor perfection.

Cylinders 5½ x 5½ inches and develop 50 M. P. They have forged nickel-steel connecting rods with five large bearings. The cam gears operating all the valves are of the combination type, with wide face and coarse pitch, thus making them strong and noiseless. There is no satisfaction to the motorist like that of knowing the engine is reliable, and there is even a greater satisfaction in the knowledge that every special feature of the New Thomas is absolutely essential to comfort and happiness.

We have already brought to your attention The Thomas Safety Device, which positively renders accidents from backing an impossibility.

The 50-Horsepower Thomas Flyer

has many new improvements, that are so essential to comfort and satisfaction in motoring, that it is only possible to point out a few of these mechanical advantages at a time.

Watch our coming announcement in this magazine, in which will be described in detail—

The most effective metallic three-disc clutch in operation.

Gears that may be changed between high and low without passing through intermediate gears.

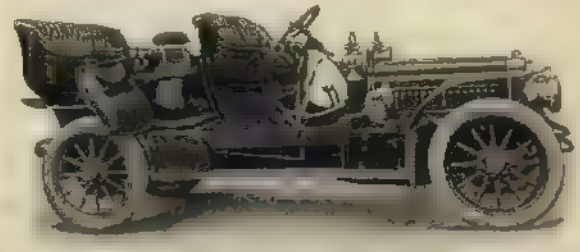
Hill climbing—will carry five passengers up a 14 per cent. grade on high speed at the rate of 40 miles an hour.

Practical use of Chain Drive.

New dustless body—dust suction entirely eliminated.

A guaranteed speed of from 6 to 60 miles per hour on the high gear, always running quietly, smoothly, without rock or jar.

In order that you may have a complete understanding of the All American Car which at last surpasses the finest Foreign Product, besides giving you a concise and accurate description of many of its special features in this magazine every issue, we want to send you our illustrated catalogue and special Thomas literature.



THE E. R. THOMAS MOTOR CO.

Largest Manufacturers of 50 Horsepower Cars in the World.

BUFFALO, N. Y.

Members Association of Licensed Automobile Manufacturers

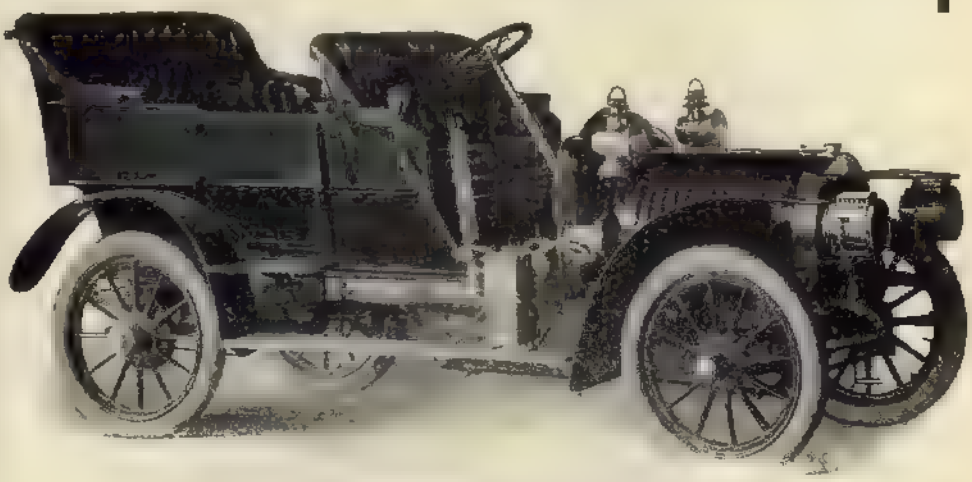
Elmer Van Wie
2500 21st Street
Racine, Wis. 53403

THE 1906 MODEL B

Rainier

"The Pullman of Automobiles"

Absolutely the highest grade motor car built in this country, bar none, and the only car that can consistently compete with foreign machines. You will do yourself an injustice if you decide on your car without investigating this triumphant American production. New style make and break spark. Simms-Bosch Magneto, Bevel Gear Drive. Very large and roomy full aluminum bodies.



Model B Rainier, 30-35 H. P. Price, $4,000

Guaranteed Free of Repairs for One Year

Do you realize fully the great superiority of the "make and break" over the jump spark?

Do you know that it does away entirely with the coil, the commutator, the batteries, and the spark plugs, and substitutes for all these a simple hammer and anvil, mechanically operated, which cannot get out of order?

Do you know that 90 per cent. of the foreign makers have already adopted this method?

Do you know that the RAINIER car is guaranteed not to cost one dollar for repairs within one year of purchase, unless you have an accident, and that it stands alone in this respect?

Learn all about it in our new Bulletin just issued.

THE RAINIER COMPANY, Broadway, Cor. 50th Street, New York

Boston Agents: MORRISON-TYLER MOTOR CO.

Good Agents wanted in unassigned territory.

The Rapid Motor Commercial Vehicles

Our entire organization has from the very first been devoted exclusively to the building of Commercial Vehicles.

The success of Rapid Motor Wagons is due to the fact that they are built to give heavy, continuous service, and carry heavy loads.

The wagon illustrated weighs 3230 lbs and carries 3000 lbs. easily. Rear wheel measures 34 inches, front wheel, 32 inches; solid tires. The double side chain drive insures a maximum of power delivered to the 2-inch solid steel axles. The cut illustrates only one of our many bodies. Size and style of body furnished to meet your requirements.

Price, one ton, $1400; one and one half tons, $1800

FULLY GUARANTEED FOR ONE YEAR

Agents can secure territory by writing me now, before all choice allotments are gone. Our new factory is a guarantee of prompt delivery.

Address, B. M. HENRY, Sales Manager

RAPID MOTOR VEHICLE CO, Pontiac, Mich.

GROUT

GASOLINE CAR

Price, $2500

Including Top, Headlights, Two Oil Lamps, Horn and Full Set Tools.

The Car of Quality and Simplicity

Four cylinder, 30-35 H. P., water cooled, high tension ignition with one coil and distributor. All wires stationary. Quadrants with spark retainer and throttle stationary, not turning with wheel. Perfect system of oiling, both splash and new mechanical oiler.
Write for our catalogue.

Grout Bros. Auto Co.

ORANGE, MASS.

N. Y. AGENCY—Menseng & Chapman
1855 BROADWAY

SPECIFY OLEO SPARK PLUGS

FOR YOUR AUTOMOBILE

Guaranteed for service, absolutely soot proof, will give results under any conditions.

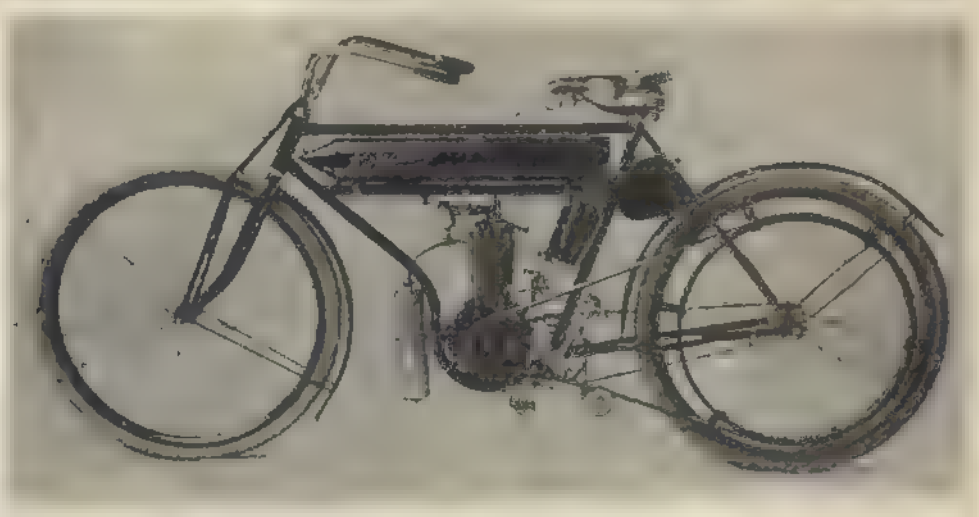
Oleo Spark Plugs in porcelain and mica. Magneto Spark Plugs. Wire and Terminal attachments in hard rubber and metals. Electrical appliances of all kinds. Special fixtures made to order to meet individual requirements. Manufactured by the Societe L'Oleo, Paris, France

The General Public are cautioned not to purchase any of the products of the Societe L'Oleo, except those articles imported direct by the Viqueot Company in accordance with its special arrangements.

Sole Representative and Licensee for Patent and Trade Mark rights

THE VIQUEOT COMPANY. Works: Paris, France

General Office and Salesrooms, 215-217 W. 48th St., N. Y. City.



TO AGENTS, RIDERS AND DEALERS.

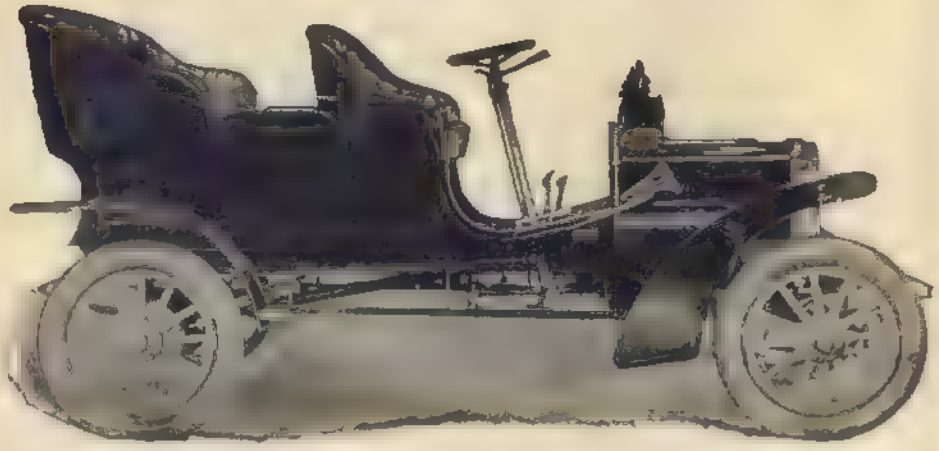
We wish to call your attention to our up-to-date 1906 belt drive model. We believe that you will agree with us the lines are up to date. You will note the frame is a very strong one; that we have a long wheel base, 55", insuring an easy riding wheel.

Our advance sheet No. 1 is now ready, and will be mailed on application

RELIANCE MOTOR CYCLE CO., Addison, N. Y.

NORTHERN

AUTOMOBILES



The Silent Northern Touring Car

20 Horse Power Double Opposed Motor

Tires 30 x 4 in. Seats 5 passengers comfortably.
Price with full gas and oil lamp equipment, $1800 F. O. B. Detroit.

The peculiarly strong, simple construction of this car makes it the ideal American car for American roads. Abundant power. Will cover any road and climb any hill with full load at high speed. Wonderfully easy control—no complications—no side levers—all changes made from the steering column and pedals conveniently placed. Mechanism all encased and thoroughly protected from mud, dust, and water—quickly accessible. Only three vital parts to oil, and the oil-box is so placed that the heat from motor insures a free flow of oil winter or summer.

No oil leads.

The Silent Northern is the only dustless car, and is the quietest, and easiest running car in the world—but you should have the new catalogue No. 53 which gives complete information and illustrates the seven 1906 models. Write for it today.

Northern Manufacturing Co.

DETROIT, U. S. A.

Member Association of Licensed Automobile Manufacturers.

WE WANT TO BUY

BUICKS

If you have a second-hand Model "C" 1905 Buick touring car for sale, communicate with us at once.

Jaynes Automobile Co.

Buffalo, N. Y.

The Thomas Against the World

Extraordinary interest centers in the Thomas Flyer for 1906 because we have demonstrated that this is the car which is to represent America against the world.

In our public announcements of the manifold mechanical advantages of

The 1906 New 50 Horsepower Thomas Flyer

we have made you familiar with many of the essential features which have made the Thomas a recognized power in the automobile world both at home and abroad.

Now we have a special reason in calling your attention to the

Scientific Chain Alignment of the Thomas

It provides for equalizing the strain on both rear bearings, instead of one. Though more costly than the shaft drive, we still continue the side chain drive, which is the universal practice abroad; with home manufacturers of high powered cars, having largest experience, the divided rear axle on large high powered cars being considered more complicated and less reliable.

We were not called upon to replace a single chain on four hundred large touring cars in the season of 1904-05.

Anyone can fix a chain; it requires an expert to repair a shaft drive, and as in the course of years, they both wear, the chain is quicker, simpler and cheaper to replace, and the sprockets can be changed for racing or hill climbing.

The New Thomas is exceedingly quiet and smooth running and is the fastest stock touring car in America. It is very strong in wearing parts, also in parts subjected to the severe strains of American Road conditions. Both crank and transmission cases have twice the usual number of bolts.

Send for our 1906 illustrated catalogue, in which we describe in complete detail—The most effective metallic three-disc clutch in operation; gears that may be changed between high and low speeds without passing through intermediate gears; new dust-proof body—dust suction eliminated; a guaranteed speed of from six to 60 miles per hour on the high gear, always running smoothly and quietly, without rock or jar.

The New 50 Horsepower Thomas Flyer is positively guaranteed to show sixty miles an hour before shipment.

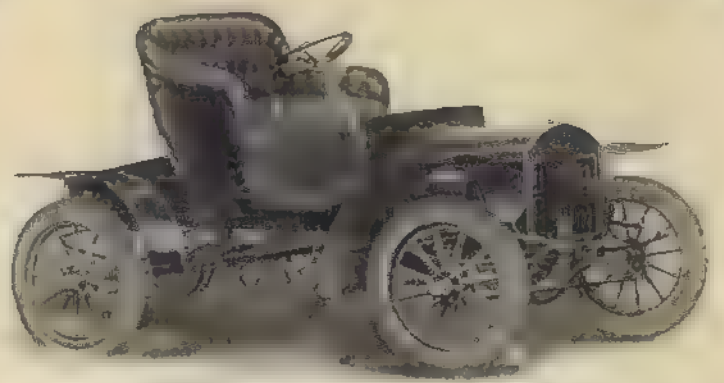
THE E. R. THOMAS MOTOR CO.

Largest Manufacturers of 50 horse-power cars in the world

Niagara Street, Buffalo, N. Y.

Members Association Licensed Automobile Manufacturers.

Wayne



ONE OF OUR 1906 MODELS

Wayne Model H, $800. Two-Passenger Runabout.

MOTOR, 2-cylinder opposed under hood Cylinders 4½ x 4, developing 14 H. P., water-cooled TRANSMISSION, planetary gears, with DIRECT BEVEL GEAR DRIVE. Control is by a single lever which engages the high speed clutch and reverse. The brake and slow speed are controlled by foot pedals. WHEELS, 28 x 3. EQUIPMENT, complete set of tools.

The strong features of this car are the extreme simplicity of the engine and transmission. The crank case and transmission case form one casting, and the entire engine can be taken apart or assembled in half an hour

MODEL F, 4 cylinder car, cylinders 5 x 5, 40 H. P. Seating capacity Price, $3,500
MODEL K, 4 cylinder, 5 passenger touring car. 35 H. P. Sliding gear transmission. Price, $2,500
MODEL B, 4 cylinder, 5 passenger car, 24-28 H. P. Sliding gear transmission Price, $2,000
MODEL C, 5 passenger car. Double opposed motor, 20 H. P. Planetary transmission Price, 1,250

The Wayne Agent can supply a high grade car at any price his customer may demand

We have the Best—car for the customer
proposition for the Agent

Write for Agency arrangements and descriptive matter

Chicago show, of course.

WAYNE AUTOMOBILE CO.

DETROIT, MICH.

WHY NO CAR SHOULD SATISFY YOU BUT

The Thomas-Flyer

It is impossible in brief announcements to convey a complete and comprehensive conception of the manifold mechanical superiorities of the Thomas-Flyer. But it is possible to point out a few dominant features peculiar to this magnificent car which have won for it the high honor of representing America against the world in automobile manufacture.

From time to time we shall try to describe for you special features which are essential to your comfort and satisfaction and which you should insist upon having. In this announcement we group a few of the special Thomas advantages calling special attention to the valuable Thomas *Safety Device.*

THE CAR YOU BUY SHOULD PROVIDE A speed of from one to forty miles per hour on the high gear direct drive, without rack or gear, by means of mechanically operated valves, and separate cylinder great flexibility enabling you to climb the steepest grades or the most crowded streets on the high gear.

THE CAR YOU BUY should be able to take a 16% grade as the Thomas has done, carrying five people on the high grade showing a speed at the summit of three miles an hour.

THE CAR YOU BUY should have a dust-proof body. The Thomas body is patented. There is no straight line in its design. Dust suction is entirely eliminated. The dust does not rise until it is fifty feet behind the car. Ladies can travel, and ride in the rear without fear of dusting their traveling costume.

THE CAR YOU BUY should seat seven, as does the Thomas—two in front and five in the rear. It should have two revolving chairs which are removable and may be placed under the cushion. It should be luxuriously upholstered in the best hand-buffed leather, dark gray hair and springs. Shaw and coat racks, luggage box for two large suit cases, straps, tire and tool box.

THE CAR YOU BUY should have a clutch equal to the Thomas cloth, in which patents are pending. These metallic discs a perfect clutch not susceptible of any improvements. After the most rigid and exhaustive tests of thousands of miles under adverse conditions with extra heavy loads the Thomas stands as the rejuvenator never having shattered to cast iron gear.

THE CAR YOU BUY should have a transmission equal to the Thomas three-speed selective type. Four speeds forward and reverse. Noiseless. Possesses the exclusive feature of roller bearing on forward end of main transmission shaft and have Hess Bright bearings and large ball thrust bearing, with drive direct on the high speed without a gear in mesh. Very large spur gear differential. Wide faced gears and anti-stripping device, which renders it impossible to strip the gears. Gears may be changed between high and low without passing through intermediate gears. The strongest and most efficient and most costly transmission in use.

THE CAR YOU BUY should have the combinator on the dashboard. Various attempts have been made at one and above to place the combinator on the dashboard. The Thomas method has proven successful. The others have not.

THE CAR YOU BUY should use a single coil. With one exception all attempts to accomplish this have been unsuccessful save in the case of the Thomas. Every one adjustment of vibrator required for all cylinders.

The Celebrated Thomas Safety Device.

You do not need to be told how many lives have been lost by cars backing down hill. Are you not entitled to be guaranteed against the danger of any such accident? Is not the Thomas Safety Device absolutely essential to your safety? Every Thomas automobile turned out is equipped with the Thomas Safety Device, a peculiar ratchet cast integral, with the brake and sprocket drum on the rear hubs, the connecting pawl being pivoted to the brake spider. It is operated by hand lever on the right side of the dash board, to which the pawl is connected by a wire cable. This safety device positively prevents the car from backing down hill should the engine stop. It can be used in place of the brake when stopping on a hill. This makes the Thomas car particularly adapted for use in hilly sections, and renders accidents from backing an impossibility. It is one of the distinctive and exclusive features of the Thomas.

Get in touch with the nearest Thomas representative and place your order at the earliest possible moment. Write for illustrated catalogue.

The Thomas Motor Co.

Niagara St., Buffalo, N. Y.

MEMBERS ASSOCIATION LICENSED AUTOMOBILE MFGS.

The Incomparable WHITE

The Car for Service

All Roads Look Alike to the White

The White, owing to the advantages inherent in its unique system of generating and utilizing steam as a motive power, will take you anywhere at any time it is a touring car in the fullest sense of the term If you own a White you need not wait until favorable weather and County Supervisors make the roads hard and smooth, nor need you confine your touring to the main highways All the wild and beautiful spots of nature are accessible to the driver of a White, regardless of road conditions Buy a White and see the country as you have never seen it before and as you cannot see it in any other way.

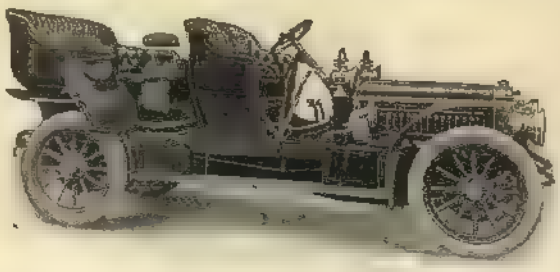
One other point of interest, the White, because of the simplicity of its mechanism, is particularly suitable for the man who wishes to drive and to take care of his own car.

Write for Literature

WHITE SEWING MACHINE COMPANY

Cleveland, O.

International Triumph of The Thomas



We have no hesitancy in predicting that the Thomas will sweep away the last vestige of doubt that exists in the minds of those few Americans who may be prejudiced in favor of foreign cars the present season.

¶ We wish to emphasize the fact that in costliness of construction and in extraordinary excellence of the material utilized in its construction, the Thomas is without peer in the native or foreign market.

The New 50 Horse Power Thomas Flyer

has all the vitally essential and always important features of excellence now to be found in any American or Foreign cars.

¶ High power and great flexibility of the motor, a perfect clutch, double rigidity; simplicity of design and construction an extra number of the most expensive anti-friction bearings, positive lubricating features, scientific chain alignment, constituting a car which is perfectly balanced throughout in every point.

¶ Add to these features the anti-stripping device; dust proof body seating five or seven, with revolving seats; luggage, tool and tire box coat racks, its beautiful design and luxurious upholstering, and we think we can say without any exaggeration that no other car in the world combines so many points of safety, efficiency and comfort.

The Thomas Patented Transmission

¶ In impressing upon you the leadership of the Thomas, we want to make clear the fact that we possess the exclusive feature of roller bearing in forward end of the main transmission shaft. The plain bearing is usually used on all other machines. Five Hess Bright bearings and large ball thrust bearings with drive direct on the high speed without gear enmesh, and the very large four spur gear differential; the large diameter; the wide faced gears and anti-stripping device.

¶ This anti-stripping device renders it absolutely impossible to strip the gears as power can be applied while the gears are enmesh

¶ The Thomas transmission is of the selective type, four speeds forward and reverse, absolutely noiseless.

¶ The gears may be changed between high and low without passing through the intermediate gears. Oil proof heavy transmission case doubly bolted.

¶ We certainly urge a comparison of the Thomas transmission with the transmission of the highest priced cars in the world. We think you will agree with us that the Thomas transmission includes more expensive bearings, and has the strongest, most efficient and most costly transmission of any car made, either at home or abroad.

¶ The ease of operation, economy of up-keep and comfort-giving of the Thomas has brought perfect satisfaction, comfort and happiness to so many motorists, that all the facts we can give you will not do justice to the supreme American Car. You must see it and use it to fully understand and appreciate its superiority.

— Send for Illustrated Catalogue —

THE E. R. THOMAS CO.

Niagara Street Buffalo, N. Y.

Members Association Licensed Automobile Manufacturers.

The Incomparable WHITE

The Car for Service

WHITE CATALOG

Everyone interested in automobiles, whether steam, gasolene or electric, should write to us for the new catalog of the Model "F" White steam car. It contains, first of all, a brief historical sketch tracing the gradual perfection of the steam engine by the labors of many generations of engineers. Then is related how Rollin H. White, by the invention of an entirely new system of steam generation, whereby the boiler was eliminated, devised the first successful steam machine. This car was first offered the public in 1901.

Brief references are made through the catalog to the success of this first model and to the constant victories and notable achievements which every model of the White steamer has each year placed to its credit. There is also included a concise and lucid description of the White system. Finally, there are shown the various Model "F" cars—touring cars, limousines, landaulets, victorias, runabouts, extension landaulets—which we are now delivering.

A POSTAL CARD TO US BRINGS THE CATALOG BY RETURN MAIL

WHITE SEWING MACHINE COMPANY

Cleveland, O.

The Incomparable WHITE

The Car for Service

All Roads Look Alike to the White

The White, owing to the advantages inherent in its unique system of generating and utilizing steam as a motive power, will take you anywhere at any time—it is a touring car in the fullest sense of the term. If you own a White, you need not wait until favorable weather and County Supervisors make the roads hard and smooth, nor need you confine your touring to the main highways. All the wild and beautiful spots of nature are accessible to the driver of a White, regardless of road conditions. Buy a White and see the country as you have never seen it before and as you cannot see it in any other way.

One other point of interest the White because of the simplicity of its mechanism, is particularly suitable for the man who wishes to drive and to take care of his own car.

Write for Literature

WHITE SEWING MACHINE COMPANY

Cleveland, O.

International Triumph of The Thomas

We have no hesitancy in predicting that the Thomas will sweep away the last vestige of doubt that exists in the minds of those few Americans who may be prejudiced in favor of foreign cars the present season.

¶ We wish to emphasize the fact that in costliness of construction and in extraordinary excellence of the material utilized in its construction, the Thomas is without peer in the native or foreign market.

The New 50 Horse Power Thomas Flyer

has all the vitally essential and always important features of excellence now to be found in any American or Foreign cars.

¶ High power and great flexibility of the motor; a perfect clutch, double rigidity, simplicity of design and construction, an extra number of the most expensive anti-friction bearings, positive lubricating features, scientific chain alignment, constituting a car which is perfectly balanced throughout in every point.

¶ Add to these features the anti-stripping device dust proof body seating five or seven, with revolving seats, luggage, tool and tire box, coat racks, its beautiful design and luxurious upholstering, and we think we can say without any exaggeration that no other car in the world combines so many points of safety, efficiency and comfort.

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¶ In impressing upon you the leadership of the Thomas, we want to make clear the fact that we possess the exclusive feature of roller bearing in forward end of the main transmission shaft. The plain bearing is usually used on all other machines. Five Hess Bright bearings and large ball thrust bearings with drive direct on the high speed without gear enmesh, and the very large four spur gear differential, the large diameter, the wide faced gears and anti-stripping device.

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¶ The Thomas transmission is of the selective type, four speeds forward and reverse, absolutely noiseless.

¶ The gears may be changed between high and low without passing through the intermediate gears. Oil proof heavy transmission case doubly bolted.

¶ We certainly urge a comparison of the Thomas transmission with the transmission of the highest priced cars in the world. We think you will agree with us that the Thomas transmission includes more expensive bearings, and has the strongest, most efficient and most costly transmission of any car made, either at home or abroad.

¶ The ease of operation, economy of up keep and comfort-giving of the Thomas has brought perfect satisfaction comfort and happiness to so many motorists, that all the facts we can give you will not do justice to the supreme American Car. You must see it and use it to fully understand and appreciate its superiority.

Send for Illustrated Catalogue

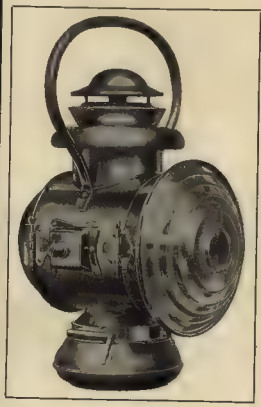
THE E. R. THOMAS CO.

Niagara Street Buffalo, N. Y.

Members Association Licensed Automobile Manufacturers.

AN EPOCH IN THE HISTORY OF OIL LAMPS

The TOURIST Cold Blast lamp for 1906 is a wonderful light producer and is the most dependable path finder made. SEE THE LENS?



Burns common kerosene, will not blow out or jar out, emits no odor and is entirely free from the usual lamp troubles.

We can't pick a car for you but our oil lamps are so superior they are easily recognized as absolutely the best on the market. They are the result of 35 years experience in making out door lamps.

WRITE FOR BOOKLET SHOWING COMPLETE LINE.

C. T. HAM MANUFACTURING COMPANY

ROCHESTER, N. Y.

Good Lamp Good Car —Then Get a SOLAR

Poor Lamps—Poor Motoring

The value of a motor car is increased by

Solar Acetylene Lamps

This is a fact that has been proved repeatedly.

Enough bad motor lamps are made each year to supply the motoring public ten times over.

A poor lamp is quickly discovered and discarded and the luckless buyer tries again.

Motor car people understand the necessity for first grade lamps. With that knowledge, comes the demand for SOLAR LAMPS.

The SOLAR burns smoothly without attention. Its glare is brilliant, lasting and unwavering. Its cost is greater and so is its service. The motorist with the SOLAR never need halt on the lamp's account.

Insist on getting the SOLAR Lamp.

The Badger Brass Mfg. Co.
KENOSHA, WIS.

DIETZ
AUTO LAMPS

Stay lighted absolutely and give the maximum illumination

DIETZ Lamps have a larger sale in France than any French make. The best "Daisy" lamp is the DIETZ, and, by the same proof, the best American lamp is the DIETZ. Perfect in manufacture and in the design, which gives the brightest unflickering flame and the most efficient reflecting surfaces,—35 candle power to others' 28.

A tail-lamp that goes out is a danger to life or a cause of arrest, for you cannot watch it. The first fine would pay for a dependable DIETZ

[illegible] Oil a few [illegible] instantly [illegible] from [illegible] are generated [illegible] burning the oil, by the [illegible] which fits DIETZ [illegible] burners. They will the [illegible] more light than any other gas lamp, except gas's own mirror [illegible] Its [illegible] these features alone sufficient in practical advantages to determine your choice

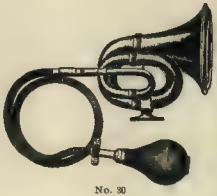
Specify DIETZ Equipment, or order [illegible] check, and we will see that you are supplied.

R. E. DIETZ COMPANY
Established 1840
61 Laight St., New York

The Largest Manufacturers in the World

"ESCO" HORNS

No. 32



No. 30

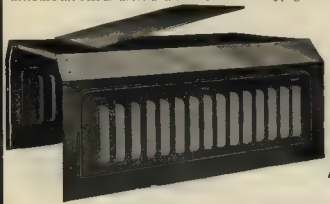
We actually manufacture our Horns and own our factory
Send for prices and new 1906 Catalogue No. 65
Also flexible brass tubing (asbestos lined) all sizes

STEVENS & CO.

99 Chambers St., New York City, U. S. A.

LONG RADIATORS AND HOODS

We recommend the Vertical Spiral Tubed Radiators which are becoming so popular among the higher class of Automobile Manufacturers. We make these Vertical Spiral Tubed Radiators out of all sizes of Tubing from ¼ inch to ½ inch. It is now an admitted fact that Tubular Radiators are the best all around Radiators for efficiency, lightness, strength and durability.



We also build a full line of Hoods in any design or shape our customers may desire.
Our new Catalogue, illustrating many new styles and types and containing much valuable information, is now in press. Don't fail to get a copy before deciding on your 1906 equipment.

LONG MANUFACTURING CO., CHICAGO
LONG-TURNEY MFG. CO., ROME, N. Y.

HAYNES

ROAD PERFORMANCE.

The most important consideration to you in the selection of an automobile is the car's record in actual every day use.

What is its reputation among those who have driven it, for reliability and cost of maintenance? What of its action in mud and sand and snow?

These are the points that should interest you.

For more than thirteen years Haynes cars have had the unquestioned reputation of being the cars of consistent road performance. They are the cars of low cost for upkeep. The car the repairman seldom sees. Always ready, seldom out of order, as steady and reliable as the old family horse.

The reason for this lies in the Haynes exclusive features, fully described in the Haynes catalogue. When sending for it, address Desk G 8.

The Haynes is the highest-powered shaft-driven car built.

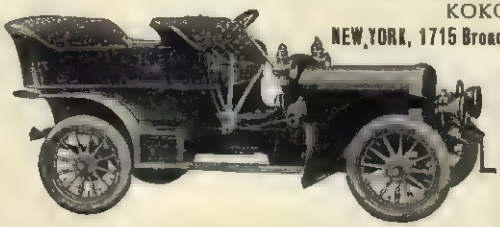
We shall exhibit only at the 7th National Automobile Show at Madison Square Garden, Jan. 12-19, 1907

HAYNES AUTOMOBILE CO.

Oldest Automobile Manufacturers in America. Members A. L. A. M.

KOKOMO, IND.

NEW YORK, 1715 Broadway CHICAGO, 1420 Michigan Ave.



Model "R" Four-Cylinder Touring Car

Vertical roller-bearing engines. Cylinders cast separately, 5¼x6 inches, 40 H. P. An exclusive transmission that absolutely prevents stripping of gears. Positive cooling system. Individual and special lubrication. Master Clutch has metal faces and takes hold without jerking. Shaft drive. Exclusive universal joints that prevent wear on pins. Sprocket and Roller Pinion and perfect Rear Axle, all exclusive. Roller-bearings throughout. 108-inch wheel base, 64-inch tonneau, seating five people. Four to 60 miles an hour on high gear. Weight, 3,150 pounds Price, $5,500, f. o. b. Kokomo. Full equipment

THE BAKER ELECTRIC STANHOPE

Among automobiles of every description and type none so completely meets every requirement of fastidious people as the

Baker Stanhope

It is artistic in design yet thoroughly substantial and durable.

The absence of steam, gasoline, water and lubricants renders it absolutely clean at all times, while the elegance and refinement of its upholstery and every appointment insures a carriage that is adapted for the use of ladies or gentlemen who want the best and will have nothing less.

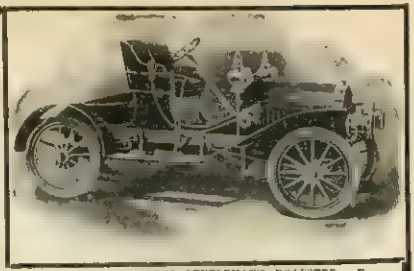
It is an efficient servant always ready for use, easy and simple to control, possessing good speed and ample power to climb any hill.

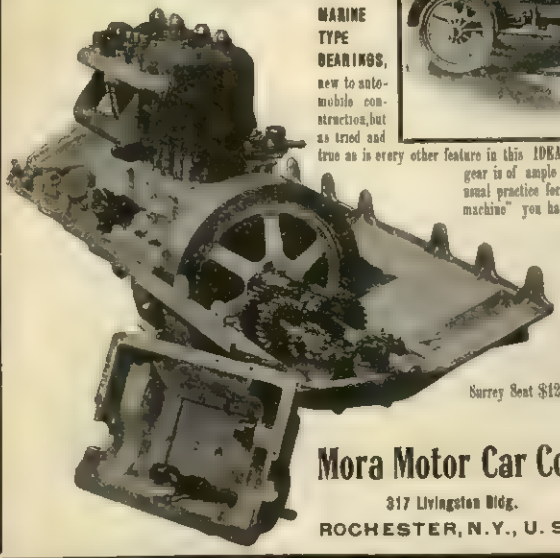
BAKER ELECTRICS comprise Stanhopes, Imperials, Suburbans, Surreys, Depot Carriages and Broughams. Agents in all large cities. Write for Catalogue.

The Baker Motor Vehicle Co. 18 Jessie St., - Cleveland, O.

Mora Roadster

MECHANICALLY RIGHT.





MARINE TYPE BEARINGS, new to automobile construction, but as tried and true as is every other feature in this **IDEAL GENTLEMAN'S ROADSTER.** Every gear is of ample size and strength, larger than is the usual practice for cars so light. It's the "heart of the machine" you have to know about, and here's one you can master. Send for 1907 Catalogue.

Specifications—Four cylinder vertical Engine; 24-horse-power; water cooled. 98-inch wheel base; 32 inch wheels. Weight 1700 lbs. Entirely mud proof. Price $1,800.

Surrey Seat $125 additional.

Mora Motor Car Co.,

317 Livingston Bldg.

ROCHESTER, N.Y., U. S.A.

Mora Roadster

"Pullman" Motor Cars

Early Fall Models at $2,000 and $2,500

NOW READY

CARS OF THE HIGHEST RANK

NEW FEATURES:

New compound clutch movement. New steering device and control.
New exhaust piping, no back pressure. New front and rear axles, etc.

Our aim has not been to build a racing car, but a good dependable touring car, simple in operation, made of the best material the market affords, along advanced ideas known to be correct. In no part of the power applying mechanism is there any but long tried material used, and this car can be relied upon to give satisfactory service and to stand up to continued hard usage. **WRITE TO US.**

YORK MOTOR CAR COMPANY, YORK, PA.

AGENTS: New York City, The DeWitt Automobile Co., 256 W. 80th St. Brooklyn, J. W. Mears, 7 & 9 Ocean Parkway. New Jersey, Newark Motor Car Co., Newark, N. J. E. K. Baily & Co., Somerville, N. J. Massachusetts, Henderson Bros., North Cambridge, Mass. Pennsylvania, Hazleton Machinery & Supply Co., Hazleton. Keystone Motor Car Co., Harrisburg.

UPRIGHT CAULKING TOOLS.

RIGHT AND LEFT HAND

PRICES, FIG. 9842.

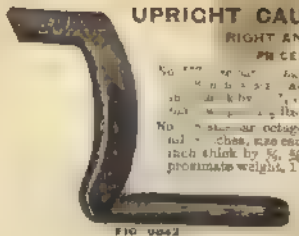


FIG. 9842

No. [illegible] square bar, ½ inch length over [illegible] inches, size of caulking end, ½ by ½ inch thick by ⅝, ¾ or ⅞ inch wide, approximate weight, 1 lb., per lb. [illegible]

No. [illegible] octagon, ½ inch [illegible] inches, size of caulking end, ½ by ½ inch thick by ⅝, ¾ or ⅞ inch wide, approximate weight, 1 lb., per lb. [illegible]

$0.11

STUB CAULKING TOOLS.

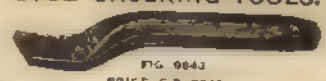


FIG. 9843

PRICE F O 9843

½ inch octagon.

No. [illegible] 590 591 592 593 594 595 596 597 598

Thickness of end, in. ⅜ ⅞ ½ ⅝ ¾ ⅞ ⅛ ⅛ ⅛

Nos. 590 to 598 inclusive, per lb. $0.81

The Fig. 9843 have caulking ends varying in length from 1 inch to 1⅞ inches and in width from ⅜ inch to 1 inch. Average weight 11 pounds per dozen.

PITTSBURG CAULKING TOOLS.

CONCAVE PATTERN.

FIG. 9844

PRICE, FIG. 9844.

No. [illegible] square bar, ½ inch length, 5 inches, weight per dozen, 9½ lbs. per lb. $0.63

OCTAGON BAR.

CONVEX PATTERN

FIG. 9845

PRICE FIG. 9845

No. [illegible] octagon bar, ½ inch length, 5 inches, weight per dozen, 9½ lbs. per [illegible] $0.63

YARNING IRONS, FLAT PATTERN.

FIG. 9846.

PRICES, FIG. 9846.

No.	607	608
Size bar [illegible] inch	½	⅝
Length of [illegible] inches	5	5
Thickness with [illegible] inch	⅜ to ½	½ to ⅝
Weight, per dozen, lbs.	12	9
Per lb.	$0.40	$0.40

YARNING IRONS, CONCAVE PATTERN.

PRICES, FIG. 9847.

No.	649	648
Size bar octagon, in.	⅝	⅝
Length of [illegible] inches	5	5
Thickness of points, inch	⅜ to ½	½ to ⅝
Weight per dozen, lbs.	12	9
Per lb.	$0.40	$0.40

FIG. 9847

SPRING YARNING IRONS.

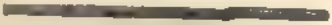


FIG. 9848

These [illegible] are made [illegible] inch [illegible] steel and [illegible] [illegible]

PRICES, FIG. 9848.

No.	664	657	656
Size bar octagon, inch	⅝	⅝	¾
Approximate weight per dozen, lbs.	7	10	14
Per lb.	$0.75	$0.67	$0.53

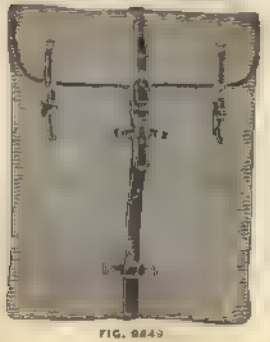


FIG. 9849

PLUMBERS' TOOL BAGS.

DESCRIPTION FIGS. 9849 AND 9850

These Bags are [illegible] and are lined with [illegible] duck. Rivets are all [illegible] by leather washers [illegible] a very strong and serviceable Bag.

PRICE, FIG. 9849

No. 384, plain bag, each [illegible] $3.75

PRICE, FIG. 9850

No. 36, leather bottom, each $4.00

FIG. 9850

ENCASED SETTING DOWN MACHINE.

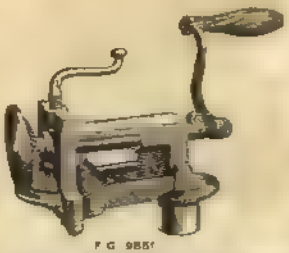


FIG. 9851.

DESCRIPTION, FIG. 9852.

The A[illegible] Setting [illegible] the [illegible] end [illegible] journal [illegible] arrangement [illegible] the faces ready [illegible] pass over [illegible] without straining the [illegible] The [illegible] are [illegible] bearing [illegible] be [illegible] sufficiently [illegible] It will [illegible] wear [illegible] and strong [illegible] so [illegible] all [illegible] heavy and N [illegible]

PRICES FIGS. 9851 AND 9852.

Encased setting down machine with standard each	$9 75
Encased setting down machine [illegible] each	9 75
Extra heavy setting down machines [illegible] with standard each	13 00
A[illegible] setting down machine [illegible] each	13 00
A[illegible] setting down machine [illegible] each	13 00
Extra [illegible] each	3 00
Lower [illegible] for encased [illegible] machine each	3 00

AMERICAN SETTING DOWN MACHINE.

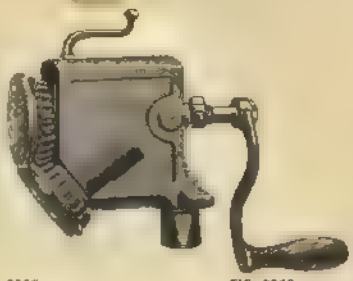


FIG. 9852.

WIRING MACHINE.

WITH ADJUSTABLE BOXES AND DUPLICATE PARTS

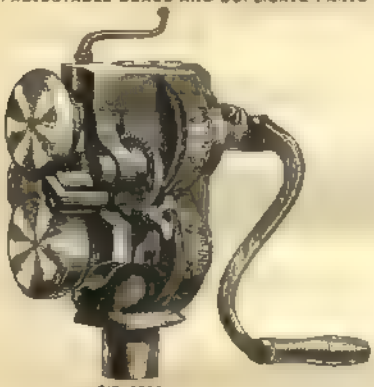


FIG. 9853.

PRICES, FIG. 9853.

Encased wiring machine with [illegible] each	$ 4 00
Encased wiring machine with [illegible] each	15 [illegible]
Extra upper or [illegible] with [illegible]	2 [illegible]

Extra boxes for Encased Wiring [illegible] are only furnished with [illegible] or shaft.

PRICES FIGS. 9854 AND 9855.

Large turning machine [illegible] extra upper and lower face, with stand each	$ 0 [illegible]
Large [illegible] machine [illegible] with extra upper and lower faces, with [illegible] and [illegible]	9 00
Small turning machine with extra upper and lower face with [illegible] each	6 50
Small turning machine with extra upper and lower face, with [illegible] stand, each	9 25
Extra faces each	$ 50

LARGE TURNING MACHINE.

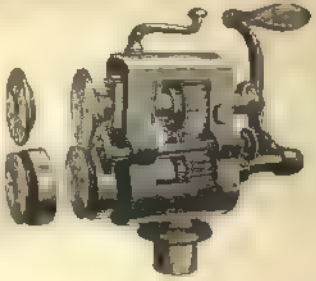


FIG. 9854.

SMALL TURNING MACHINE.

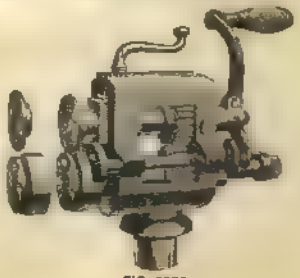


FIG. 9855.

THE FAIRBANKS COMPANY

CANDY ASSORTMENTS.

One of these assts. will start you in this profit paying line or if you are already started will freshen up your stock.

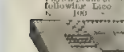
Y742, Complete Little Candy Store—10 boxes of assted. penny creations each kind in box.. One box each of the following:

Ma... (1 for a cent)
Ani...
Ba...
Ha...
J...
Ma... (5 for a cent)
Nonpareil 10c Bar
Shoestring Licorice

10 boxes in wood case, no less sold. Size for case ... About 12x8x6. **$4.80**

Y743, Profit Maker Candy Assts. of Al pens ...

Pays a profit of ... percent. One box each of following: Lico... Rocks, Slate, Modesto... Assted Fruits, 500's Pea...



Jap Gono 10's Marshmallow Drops ... Box 10c

Kisses on Stick, 1000 Bal... for Scotch Balls, also Pinch in wood box, *no charge for case.* Complete **$4.85**

Y716, "Petite" Asst.

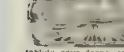
...ourton, Candies are attractive and salable and stand good retail profit. *Sold only by case of 50 lbs.*

Case **$3.40**

Y747, "Mixed Fruit" Asst.

...ow the specialties Fine yellow almonds, fruit tablets, sour drops, cream chocolates, Italian cream, mint lozenges, cocoa bon bons, peanut nougat and orange stick, total 50 lbs. *to find prices divisely candy drops in each case.*

Case complete, **$4.20**

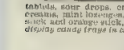


Y745, $5.95 Complete

Y744, Bread Box"—Heavy japanned bread box case, drop handles and catch, letter ... Contains 50 lbs. high grade pan ... charge for bread box. Complete **$5.00**

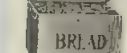
Y746, "Flour Box"—Regular 75c japanned flour bin decorated and colored filled with 50 lbs. (1½ kinds) of fancy candies, each kind plad. in patent cartons.

Size ... **$5.25**



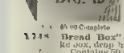
Y740, Trade Winds PRIZE

Bourice paw ...ecorns, marvel ...

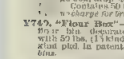


$6.95

Y701 Bar Gain Counter ...



Drops Juvenile ... Cream ... Dan...

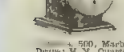


500 Marbles, 60% Jeft Spiker Dozen; M M Quarrenes, Stumpy Speeches, 500 Pin Scrambly, Whangee, 12c... Brilliants, 600, 12 boxes candy and ... packed in good case. Complete **$7.00**

IF YOU WISH WE SELECT YOUR CANDY ASST.

—Write us what you want in candies, ... give specifications for their wants on candy ... we will at any time on receipt ... are there to be several different ... ease and so best such goods ... them a good variety, and as the same ... sell out evenly over the retail counter.

ROOT BEER TABLETS.



Y107 ... Y... Y... Y

PADLOCKS.

WAREHOUSE LOCK.

FIG. 8247, NO. 0099.

DESCRIPTION, FIG. 8247.

Made of gun metal with springs of bronze and not liable to [illegible] exposure to dirt [illegible] Made [illegible] pave [illegible] [illegible] and keys of [illegible] American railways. Orders should be accompanied by a sample key.

PRICES FIG. 8247.

No. 099, with 9 inch steel chain with [illegible] keys, per dozen $10 80
No. [illegible] with [illegible] inch steel chain, with [illegible] keys, per dozen 12 60
Extra keys, per dozen 1 80

These Locks will be made alike, with keys to pass, unless orders specify otherwise. When required to be different there are 24 changes available.

DESCRIPTION, FIG. 8247.

Gun metal case and parts. A strong and reliable Lock for general service.

PRICES, FIG. 8247.

No. 0099, with 12 keys to the dozen locks, per dozen $10 80
Extra keys, per dozen 1 80

Packed six in a box, all different keyed or alike, as may be ordered. 24 changes are [illegible]

RAILWAY STANDARD SWITCH AND CAR LOCK.

FIG. 8248 NO. 039.

CHAMPION SIX LEVER PADLOCKS.

FIG. 8249 NOS. 1 TO AND 27

DESCRIPTION, FIGS. 8249 AND 8250.

Cast from gun metal. The springs are gun metal and will not rust nor give out under the action of any climate. The keys are steel, plated and polished.

PRICES, FIG. 8249.

Size 2¼ inches.

No. 1, natural finish, key changes unlimited, per dozen $8 30
No. 20, bright nickeled, key changes unlimited, per dozen 12 60
No. 27, natural finish, masterkeyed in series of 630, per dozen 15 00

PRICES, FIG. 8250.

Size, 2¾ inches.

No. 1, natural finish with 9 inch steel chain, key changes unlimited, per dozen $10 80
No. 20, natural finish, with 9 inch steel chain, masterkeyed in series of 630, per dozen 16 50

FIG. 8250 NOS. 10 AND 20

LINCOLN PADLOCKS.

FIVE LEVER AND SIX LEVER

6 LEVER.

FIG. 8251

DESCRIPTION, FIGS. 8251 AND 8252.

All parts forged and milled. Security highest grade. Interlocking spring shackle, heavy steel rivets. Gun metal springs that will not rust. Flat bright nickeled nailed keys. Unlimited changes.

PRICES, FIG. 8251.

Size, 1¼ inches.

No. 60, steel, five secure levers, case enamaled black, shackle forged steel, nickeled bright, per dozen $8 00
No. 60G, steel, five secure levers, same as No. 60, except galvanized, per dozen 8 60
No. 62, brass, five secure levers, case buffed bright, shackle bronze, bright forged, per dozen 7 60

If with 8 inch bright nickeled steel chain attached, add $1 50 to list. Can be masterkeyed in series of 630.

8 LEVER.

FIG. 8252

PRICES FIG. 8252.

Size 2 inches.

No. 60, steel, six secure levers, case [illegible] nickeled, shackle forged steel, nickeled bright, per dozen ..... $ 9 00
No. 60G, steel, same as No. 60, except galvanized, per dozen 9 60
No. 62, brass, six secure levers, case buffed bright, shackle bronze, bright forged, per dozen 9 00
If with 8 inch bright nickeled steel chain attached, add $ 1 50 to list. Can be masterkeyed in series of 630.

THE FAIRBANKS COMPANY

STAR WIRE TENSION.

FOR WIRE FENCES.

DESCRIPTION FIG. 8241.

The Star Wire Tension is simple, cast [illegible] can be applied anywhere along the line of fe[illegible] without the a[illegible] posts or other pulls. I[illegible] as it requires no extra [illegible] can be used [illegible] supply. If a [illegible] as this no hardware [illegible] required, [illegible] be handled on [illegible] wire and [illegible] the fence [illegible] Fig. 8241 is a perspective view [illegible] and shows a capstan employed [illegible] the stretcher lever. The stretcher consists [illegible] and the operating [illegible] part is provided with [illegible] and hedge [illegible] from the tubular part of A. Each [illegible] and a hook, E, at its outer end. [illegible] lever consists of a [illegible] at the [illegible] The [illegible] portions, F, not in the same plane as the arms of the [illegible] the wire will be clear of the head portion after stretching is effected.

PRICES. FIG. 8241

Clamps, per dozen	$1 75
Operating levers, each	1 00

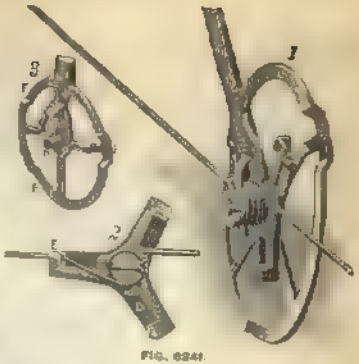


FIG. 8241.

BARN DOOR ROLLERS.

PRICES, FIGS. 8242 AND 8243

No. 85, 4 inch wheel, japanned, packed in bulk in barrels, packed 23 dozen to barrel, weight 400 lbs. per pair [illegible]

No. 84, 4 inch wheel, japanned, packed [illegible] dozen to barrel, weight 400 lbs., per pair [illegible]

FIG. 8242.

FIG. 8243.

BARN DOOR HANGERS.

FIG. 8244.

PRICE FIG. 8244

STEEL AXLE

[illegible] japanned, per pair $0 [illegible]

WELL WHEELS.

FIG. 8245.

PRICES FIG. 8245

[illegible] inch, [illegible] brown, [illegible] per dozen	$5 [illegible]
[illegible] inch, [illegible] brown, [illegible] per dozen	[illegible]
[illegible] inch, [illegible] brown, [illegible] per dozen	[illegible]
14 inch, steel, brown, [illegible] per dozen	6 00

ANTIFRICTION WELL WHEELS.

NO. 0

JAPANNED, WITH IRON ROLLERS

FIG. 8246.

PRICES FIG. 8246

[illegible] per dozen	$6 [illegible]
[illegible] per dozen	7 50

TIRE MEASURING WHEELS.

Green River.

Drop Forged, **24** Inches in circumference, Figures and Lines raised above surface so they cannot be filled with dirt. The Index Hand saves trouble of marking with chalk.

Graduated ..... Each $1 50

One in a Box.

ANVILS.

Vulcan.

Superior Pig Iron Body with Tool Steel Face.

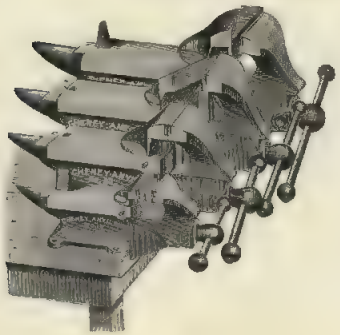
Numbers...	0	1	2	3	4	5	6	7	8	9	10
Weighs, lbs.	10	15	20	30	40	50	60	70	80	90	100
Each	$2 75	3 25	4 00	4 50	5 25	6 00	6 50	7 25	8 00	9 00	10 00

Trenton.

Solid Wrought Iron Body, Heavy Cast Steel Face, Perfect Temper.

Weight, Pounds ...	50 to 59	60 to 69	70 to 79	80 to 200	225 and 250
Per Pound				$0 20 Base	20 Base

COMBINED ANVILS AND VISES.



Cheney.

The Face of the Anvil is Chilled hard and smooth. The Jaws of the Vise are adjustable, faced with steel and tempered.

No. **10.** Weight about **9** Pounds, Jaws about **2½** Inches wide, Opens **3** Inches, Face of Anvil **4½** x **2** Inches ..... Each $5 00

No. **20.** Weight about **25** Pounds, Jaws about **3½** Inches wide, Opens 4 Inches, Face of Anvil **6½** x **3** Inches ..... Each 6 75

No **30.** Weight about **35** Pounds, Jaws about 4 Inches wide, Opens **5** Inches, Face of Anvil **8** x **3½** Inches ..... Each 8 40

No. **40.** Weight about **50** Pounds, Jaws about **4½** Inches wide, Opens **6** Inches, Face of Anvil **8½** x **4** Inches ..... Each 10 25

KNIVES.

Bowie.

With Stitched Leather Sheaths.

Stag Handle.

No. 1000	Inches.....	5	6	7	8
	Per dozen	[illegible]	1. 25	12 75	15.75

Stag Handle.
Dirk Point, Heavy Back.

No. 1002	Inches....	5	6	7
	Per dozen, $10 50		25	12 75

Stag Handle.
Solid.

No. 1001	Inches ..	5	6	7	8
	Per dozen, $12 [illegible]		[illegible]	10 25	18 50

DIRKS.

With Stitched Leather Sheaths.

Ivorine Handle.

PER DOZEN
No. B271—4⅜ inch Blade..... [illegible]

Stag Handle.

PER DOZEN
No. B268—4½ inch Blade $11.25

Stag Handle.

PER DOZEN
No. B270—4½ inch Blade..... $13 50

Pearl Handle.

PER DOZEN
No. B272—5 inch Blade $27 00

Cut shows No. 300.

PER DOZEN
No. 300—Pearl Handle, 4 inch Blade .$22.50
No. 200—Bone Handle, 4 inch Blade . .. 9.00
No. 100—Buff Handle, 4 inch Blade. 9.00

Cut shows No. 1003.

PER DOZEN
No. 1003 —Buff Handle, Pearl Inlaid; 6 inch Blade $15.00
No. 1004 —Bone Handle, 6 inch Blade..... 12.00
No. 1004½—Stag Handle, 5 inch Blade..... 10.90
No. 1004½—Stag Handle, 6 inch Blade 12.00

One-half Dozen in a Box.

POCKET KNIVES.

Extra Quality Crucible Steel Blades, Carefully Ground and Tempered. Sharpened Ready for Use.

TRADE MARK: "CHIPAWAY," REGISTERED.

CHIPAWAY*

No. C628.

Three Blades, 1 Large, 1 Pen, 1 File; Spear Point; Half Polished; 3⅛ inch Stag Handle; German Silver Bolsters and Shield; Brass Lining.

PER DOZEN

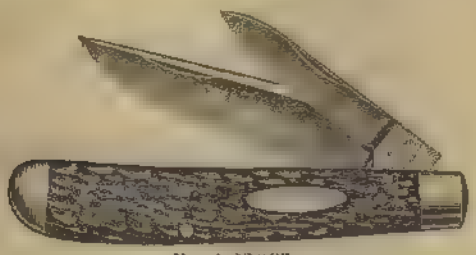
No. C628.....$12.00

No. C5602T.

Two Blades, 1 Large, 1 Pen; Spear Point; Half Polished; 3⅜ inch Stag Handle; German Silver Tips; Brass Lining.

PER DOZEN

No. C5602T.....$8.00



No. C2369½.

Two Blades, 1 Large, 1 Pen, Cap Point; Half Polished, 3⅛ inch Stag Handle. German Silver Cap, Bolsters and Shield; Brass Lining.

PER DOZEN

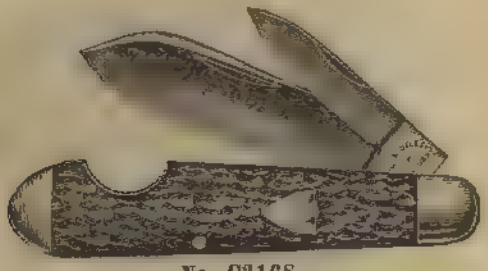
No. C2369½.....$9.00

No. C3046.

Two Blades, 1 Large, 1 Pen; Spear Point; Half Polished; 3¼ inch Handle; German Silver Bolster, Cap and Shield; Brass Lining.

PER DOZEN

No. C3046—Rosewood Handle.....$8.00
No. C3047—Ebony Handle.....8.00
No. C3048—Stag Handle.....8.00



No. C3168.

Easy Opener; Two Blades, 1 Large, 1 Pen; Spear Point; Half Polished, 3¾ inch Handles; German Silver Bolster, Cap and Shields; Brass Lining.

PER DOZEN

No. C3168—Stag Handle.....$8.00
No. C3166—Rosewood Handle.....8.00
No. C3167—Ebony Handle.....8.00

No. C5208.

Two Blades, 1 Large, 1 Pen; Spear Point; Glazed Finish; 3⅜ inch Ebony Handle; Polished Steel Bolsters; German Silver Shield; Steel Lining.

PER DOZEN

No. C5208.....$4.00

The Satisfactory CIGAR DEPT.

We buy cigars same do so-called "staple" merchandise—from first hands, in quantities, and we price them on a margin made possible by our way of selling. No big advertising expenses lurks in these prices. When you buy here you pay for cigar worth and nothing else. This department has grown on RE-orders from satisfied customers, who found they could buy here a better cigar at any given price than they could buy elsewhere. May we help you sell more cigars this season than you sold last and make more money at the same price?

CIGARS.

NOTE. We quote cigars by the thousand but will sell any quantity from 100 up.

"Cuban Girl" — 4½ in. perfecto shape, mild filler and wrapper, 50 in box.
Per M **$11.00**

Cuban Jewels—4½ in. perfecto shape, good binder, broad leaf wrapper, 50 in box.
Per M **$11.75**

Belle Rose—4½ in. perfecto shape, good filler and wrapper, 50 in box.
Per M **$12.50**

Our Beauty — [illegible] perfecto shape, [illegible] thin like a cigar. Delicate wrapper, 50 in box.
Per M **$12.50**

Little Havanas — [illegible] thin like a cigar. Delicate wrapper, 50 in box.
Per M **$13.00**

Nickel Boom — [illegible] wrapper, 50 in box.
Per M **$14.50**

Nuvo Habana — 4½ in. long corona with silken silver wrapper, 50 in box.
Per M **$14.50**

"Maestro" — 4½ in. perfecto shape, [illegible] wrapper, a very [illegible] smoke, 50 in box.
Per M, **$14.75**

Fine Record—4½ in., perfecto shape, good filler, Domestic wrapper and a fine smoke. 50 in box.
Per M **$16.50**

"Flor de Tampa" — 4½ in., perfecto shape, high grade filler Sumatra wrapper. *The finest cigar sold at [illegible] to $35.00.*
Per M **$17.75**

Starry Night — 4½ in., perfecto shape, [illegible] filler, Domestic wrapper, 50 in box.
Per M **$18.00**

"Rose Bride" — 4½ in. perfecto shape, Sumatra wrapper, [illegible] 50 in box.
Per M **$20.00**

American Sire — 4½ in., perfecto shape, [illegible] wrapper, 50 in box.
Per M. **$20.00**

Tigerita—4½ in. perfecto shape, long filler, Connecticut broad leaf wrapper, 50 in box.
Per M **$25.00**

Our Premier — 4½ in. perfecto shape, [illegible] wrapper, 50 in box.
Per M **$25.00**

TWO SPECIAL VALUES

Good, small cubics that return big profit.

La Rosa Quita Honores — [illegible] wrapper, fancy color, 50 in box.
Per M **$26.00**

Port Juan — Conchas standard size, [illegible] wrapper, 50 in box.
Per M **$25.00**

"Vete" — 4½ in. perfecto shape, [illegible] wrapper, a high [illegible] smoke, 50 in box.
Per M **$27.00**

Judge Admiral Cigar — Union made, popular size, perfecto shape, [illegible] filler, best quality Sumatra wrapper, 50 in box.
Per M **$28.00**

"Floriana" — Don Victor's [illegible] Conchas, [illegible] Londres Cinco, [illegible] Panetelas, [illegible] Coronas, [illegible] Londres Cinco, [illegible] Coronas, [illegible] Londres Cinco, [illegible] Coronas, [illegible] Londres Cinco

CIRCULAR SPRING BALANCES.

WITH LARGE DIAL AND GLASS DASH. 8 INCH DIAL. 6 INCH DASH. WITH AGATE FISH PANS. BRASS BOWS AND SWIVELS. PRICES FIG. 3016. 10 INCH PANS.

FIG. 3016. NO. 4268 A.

CIRCULAR WAREHOUSE BALANCES.

FIG. 3017. NO. 4295 X-S-T.

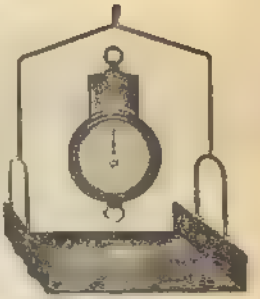


FIG. 3018. NO. 4295 X-S-T.

WITH DEEP ROUND GALVANIZED IRON PANS. IRON BOWS. PRICES FIG. 3017.

WITH SQUARE GALVANIZED IRON PANS AND IRON BOWS. PRICES FIG. 3018.

CIRCULAR SPRING BALANCES.

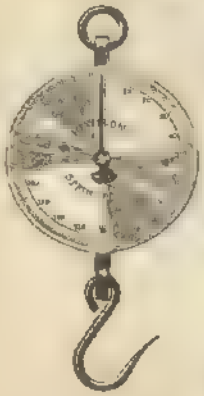


FIG. 3019. WITH HOOKS.

PRICES, FIG. 3019.

No.	Capacity, Lbs.	Each
3901	100 x ½	$ .60
3902	150 x ½	.70
3903	200 x ½	.80
3904	250 x 1	.90
3905	300 x 1	1.00
3906	400 x 1	1.10
3907	500 x 1	1.20
3908	600 x 1	1.30

FIG. 3020. NO. 4293 X-G WITH HEAVY GALVANIZED IRON SCOOPS.

PRICES, FIG. 3020.

Arm	Capacity, Lbs.	Each
6-in.	30	$ .75
8	50	.90
10	75	1.00
12	100	1.10
14	125	1.20
16	150	1.30
18	175	1.40
20	200	1.50
22	225	1.60
24	250	1.70
26	275	1.80
28	300	1.90
30	325	2.00
32	350	2.10
34	375	2.20
36	400	2.30
38	425	2.40
40	450	2.50
42	475	2.60
44	500	2.70
46	525	2.80
48	550	2.90
50	575	3.00
52	600	3.10

Special Scoop ... each

MARKET SCALES.

NEW PATTERN WITH HIGH COLUMN.

PRICES FIG. 3021.

SMALL DIAL 6-INCH.

No.	Capacity, Lbs.	Graduation, Lbs.	Price
3921	30	1	$ 3.00
3922	60	2	3.50
3923	100	2	4.00
3924	150	2	4.50
3925	200	4	5.00
3926	250	4	5.50
3927	300	4	6.00

LARGE DIAL 8 INCH.

No.	Capacity, Lbs.	Graduation, Lbs.	Price
3928	30	1	$ 3.50
3929	60	2	4.00
3930	100	2	4.50
3931	150	2	5.00
3932	200	4	5.50
3933	250	4	6.00
3934	300	4	6.50

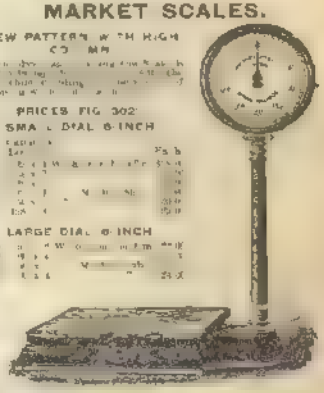


FIG. 3021.

MARKET SCALES.

PRICES, FIG. 3022.

SMALL DIAL, 6-INCH.

No.	Capacity, Lbs.	Graduation, Lbs.	Price
3941	30	1	$ 3.00
3942	60	2	3.50
3943	100	2	4.00
3944	150	2	4.50
3945	200	4	5.00
3946	250	4	5.50
3947	300	4	6.00

LARGE DIAL 8 INCH.

No.	Capacity, Lbs.	Graduation, Lbs.	Price
3948	30	1	$ 3.50
3949	60	2	4.00
3950	100	2	4.50
3951	150	2	5.00
3952	200	4	5.50
3953	250	4	6.00
3954	300	4	6.50

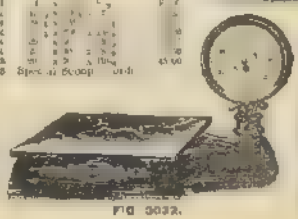


FIG. 3022.

CIRCULAR SPRING BALANCES.

FIG. 3023.
NOS. 6264, 6265 AND 6266

WITH TIN PAN TINNED IRON BOWS AND SWIVEL.

No.	Capacity Lbs.	Oz.	Each
6263	5		$5 75
6264	10		6 25
6265	30		8 75
6266	60		9 75

WITH TIN PAN BRASS BOWS AND SWIVEL.

[illegible]	[illegible]	[illegible]	[illegible]

WITH BRASS PAN BRASS BOWS AND SWIVEL.

[illegible]	[illegible]	[illegible]	[illegible]
6265 P	30		11 00
6266 P	60		13 00
6263 E	5		11 10
6264 E	10		11 60
6265 E	30		13 10

FIG. 3024.
NOS. 6264, 6265, AND 6266

FIG. 3025.
NO. 6266 E-H

WITH PORCELAIN PAN TINNED IRON BOWS AND SWIVEL.

No.	Capacity Lbs.	Oz.	Each
6265 P H	15		$ [illegible]
6265 P H	30		[illegible]
6266 P H	60		[illegible]

WITH PLAIN ENAMELED PAN TINNED IRON BOWS AND SWIVEL.

6265 E H	15		[illegible]
6265 E H	30		[illegible]
6266 E H	60		10 [illegible]

DESCRIPTION FIGS 3026 AND 3027

THESE SCALES ARE MADE WITH 9-INCH DIAL, 10-INCH GLASS SASH.

PRICES, FIG. 3026

Porcelain Enameled Pans, Nickel Silver Strength and Edges and Nickel Plated Bows.

PANS, 13 INCHES DIAMETER

No.	Capacity Lbs.	Oz.	Each
4265 E	15	[illegible]	$10 00
4266 E	30		10 60
4273 E	60		11 60

LARGE PANS 16 INCHES DIAMETER

[illegible]			[illegible]
[illegible]			13 5

Made with Double Dials, each $5 00 advance on the price of Single Dials.

PRICES, FIG. 3027

With Improved Porcelain Pans, Nickel Plated Bows

No.	Capacity Lbs.	Oz.	Each
4265 P	15		$10 00
4266 P	30		10 60
4270 P	60		11 60

Made with Double Dials, each $5.00 advance on the price of Single Dials.

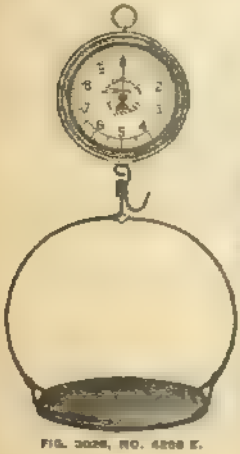


FIG. 3026, NO. 4265 E.

FIG. 3027, NO. 4265 P.

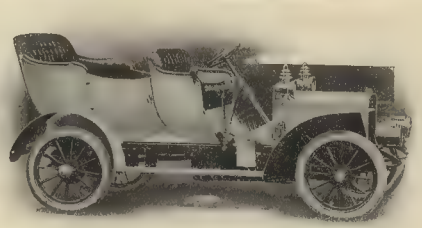
THE FAIRBANKS COMPANY

ANNOUNCEMENT

Cleveland

THE 1906 MODEL F 30-35 H. P.

Is now ready for immediate delivery. A demonstrating car is in commission at the salesroom of our General Eastern Distributing Agent, E. B. Gallaher, 228-230 West 58th Street, New York, also at our Cleveland salesroom.



BRING AN EXPERT WITH YOU

NO other American car is made of such uniformly perfect and high-grade material adapted to the purpose, or so thoroughly and intelligently assembled. There is no car on the American market that will stand up to its work so well or so long. Infinite care is exercised in every detail of construction and the **Cleveland** car represents the highest and most advanced ideas in automobile building. It is in a class by itself. The complete chassis of the **Cleveland** car is manufactured by the Garford Company, whose experts have designed and built more high-grade automobile parts and complete chassis than any other concern in America, and the **Cleveland** is, therefore, the product of years of practical experience.

SPECIFICATIONS:

ENGINE—30-35-H. P., 4-cylinder, water-cooled.
IGNITION—Simms-Bosch low tension Magneto make and break spark.
TRANSMISSION—Sliding train, 3 speeds forward and one reverse. 5 to 35 miles on third speed.
REAR AXLE—Shaft drive, clutch driven hub. Ball bearings.
FRONT AXLE—I-Beam section. Ball-bearings.
FRAME—Cold rolled pressed steel, aluminum under bonnet covering entire engine and transmission.
WHEEL BASE—104 inches.
WHEELS—Imperial whalebone, grade A, second growth hickory.
TIRES—34x4.
VALVE—Mechanically operated, inlet and exhaust interchangeable.
CARBURETOR—Float feed, requiring no adjustment.
BRAKES—Two internal expansion, dust protected, operating on rear hubs through emergency lever, holding either forward or backward. Foot brake operates on propeller shaft. Both brakes bronze against steel.
BODY—Victoria or double phaeton, tulip side entrance.
EQUIPMENT—Two head lights, 2 side lights, 1 rear light, 1 horn and tools.

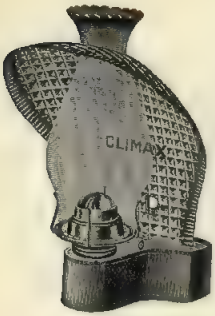
PRICE $3,500.00 to $3,000.00, DEPENDING UPON BODY EQUIPMENT. The 20-H-P. Model D will be continued without change. Price, $2,800. Both models guaranteed for one year. Catalogue and full information on request.

Cleveland Motor Car Co., Dept. 2 Cleveland, Ohio

New York Gen'l Eastern Distributing Agent:—E. B. Gallaher, 228-230 West 58th Street, New York. Boston Agent:—Butler Motor Car Co., 998 Boylston Street, Boston. So California Agent:—A. P. Worthington, Los Angeles, Cal.

Owing to the unusual interest in the CLEVELAND CAR, agents in unassigned territory are advised to enter into early negotiations.

SIDE LAMPS.



Climax

Climax.

Tin Fount, Painted Blue, with Reflector, No. 2 Burner and Chimney Complete. Per Dozen $7 50

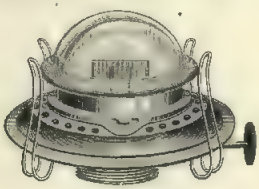
Radiant.

Glass Fount with Reflector, No. 2 Burner and Chimney, Complete..Per Dozen 6 50

Radiant

LAMP BURNERS.

Banner or Sun.


Bing.

Banner or Sun. Brass.

No. 1. For No 1 or A, 5-8 Inch Wicks..... Per Dozen $1 15
No. 2. For No. 2 or B, 1 Inch Wicks..... " 1 50

Bing Crystal Cone.

It can be used on an ordinary lamp. Can be effectively cleaned as good as new and will give one third more light than an ordinary burner with the same amount of oil.

No. 1. For No. 1 or A, 5-8 Inch Wicks .....Per Dozen $2 70
No. 2. For No. 2 or B, 1 Inch Wicks..... " 3 00

One Dozen in a Box

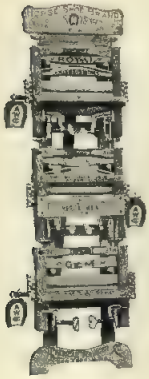
LANTERN BURNERS.

Tubular.

No. 1. For No. 1 or A, 5-8 Inch Wicks .....Per Dozen $1 15
No. 2. For No. 2 or B, 1 Inch Wicks.. " 1 75

One Dozen in a Box

CLOTHES WRINGERS.



Trio Show Stand and Sample Set No. 1.

The Set Consists of

ONE ROYAL WRINGER—Warranted for **5** Years,
ONE UNIVERSAL WRINGER—Warranted for **3** Years,
ONE GEM WRINGER—Warranted for **2** Years

and a Show Stand which is Furnished Free, all packed in one case. When in position it occupies **16** inches floor space and is **5** feet high.

Per Set Complete $12 00

Trio Show Stand and Sample Set No. 2.

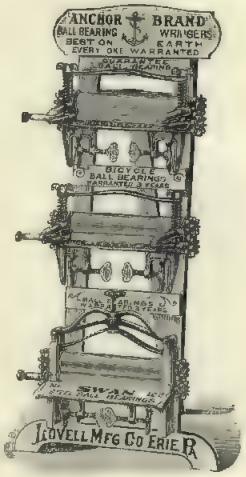
Iron Frame. Ball Bearing.

Set consists of one each

No. **122** Guarantee, warranted for **5** years.
No. **122** Bicycle, warranted for **3** years.
No. **122** Swan, warranted for **3** years.

The display stand exhibits the wringers nicely and makes an attractive, up-to-date show.

Wringers and Stand in one box, Carefully Packed.....Per Set $15 00



COACHMAKERS' VISES.

FOR WOODWORKERS, CARPENTERS AND PATTERN MAKERS.

STATIONARY BOTTOM

FIG. 6846.

PRICES, FIG. 6846.

No.	50	51
Weight, lbs.	48	50
Length of jaws, inches	4	4½
Depth from top of jaw to slide, inches	4½	4⅝
Jaws open, inches	9	9
Each	$9.00	$9.35

SWIVEL BOTTOM

FIG. 6847.

PRICES FIG. 6847.

No.	50	51
Weight, lbs.	54	56
Length of jaws, inches	4	4½
Depth from top of jaw to slide, inches	4¾	4⅞
Jaws open, inches	9	9
Each	$11.00	$11.35

STRAIGHT JAW

F. O. 6848.

PRICES, FIG. 6848.

No.	000	00
Width jaw, inches	3½	4½
Jaws open, inches	7½	9
Weight, lbs.	45	56
Each	$9.00	$10.00

OFFSET JAW

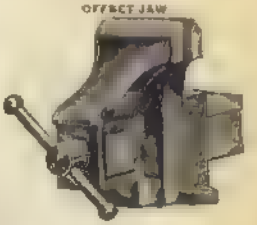


FIG. 6849.

PRICES F. O. 6849.

No.	000	00
Width jaw, inches	3½	4½
Jaws open, inches	7½	9
Weight, lbs.	39	49
Each	$9.00	$10.00

PRESTO COACHMAKERS' VISES.

QUICK ACTING, SOLID JAW.

SWIVEL BOTTOM

FIG. 6850.

PRICES, FIG. 6850.

No. 70, patent swivel bottom 4½ inch jaw opens 9 inches, weight 64 pounds, each $12.70

No. 69, stationary bottom 4½ inch jaw opens 9 inches, weight 58 pounds, each 11.00

UNIVERSAL PATTERN-MAKERS' AND WOOD WORKERS' VISE.

FIG. 6851.

PRICES, FIG. 6851.

No. 1 jaws 7 x 18¼ inches, opens 14 inches, weight 56 pounds, each $16.00

No. 2, jaws 5 x 14 inches, opens 12 inches, weight 46 pounds, each 12.50

PRICES F. O. 6852

No.	1	2
Jaws,	9	7
Opens, inches	12	7
Each	$6.00	$4.50

PATTERN-MAKERS VISES.

JAWS LEATHER FACED.

PRICE, FIG. 6852.

Height in.	22
Width jaw inches	5
Depth to screw in.	10
Opens, in.	18
Screw, in.	24 x 1¼
Weight, lbs.	100
Each	$15.50

FIG. 6852.

LIGHTNING GRIP WOODWORKERS' VISES.

FIG. 6853

RAPID ACTING VISES.

FOR WOOD WORKERS

NO. 20

FIG 6858

PRICES FIG. 6858.

No. 20, Rapid Acting Vise, length of jaws, 10 inches, depth of jaws, 4 inches.

Jaws open, inches	12	14	16	18	20
Weight, lbs.	35	37	39	39	40
Each	$6 50	$7 00	$7 50	$7.75	$8 00

No. 25, with bench stop (not illustrated), similar to above, with brass bench stop, 1 inch square, [illegible]. Each size weighs 3 pounds more than the above. For prices add 50 cents to above list.

12 inch shipped unless otherwise ordered

PRICES FIG. 6858.

No. 30, Rapid Acting Vise, length of jaws, 6 inches, depth of jaws, 3 inches, brass dog 1 inch square in front jaw, with top grip

Jaws open, inches	6	8	10	12
Weight, lbs.	20	21	22	23
Each	$6 00	$6 50	$7 00	$7 50

This 6 inch will be shipped unless otherwise ordered.

No. 30, Rapid Acting Tail Vise with side grip (not illustrated), length of jaws, 6 inches, depth of jaws, 3½ inches, brass dog 1 inch square in front jaw, from edge of bench to center of dog, 3½ inches.

Jaws open, inches	6	8	10	12
Weight, lbs.	23	24	25	26
Each	$6 00	$6 50	$7 00	$7 50

NO. 35.

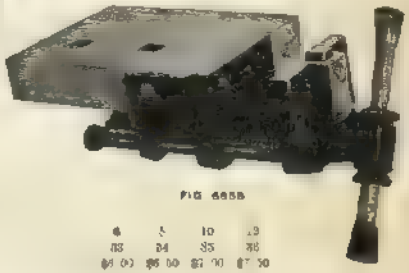


FIG 6858

PRICES FIG 6857

No. 40, Rapid Acting Vise with bench stop, length of jaws, 10 inches, depth of jaws, 4 inches, brass bench stop 1 inch square in back jaw, brass dog 1 inch square in front jaw

Jaws open, inches	12	14	16	18	20
Weight, lbs.	39	40	41	42	43
Each	$7 50	$8.00	$8 50	$8.75	$9 00

NO. 40.

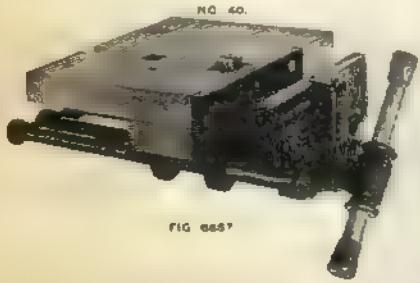


FIG 6857

PRICES FIG 6856

No 40, Rapid Acting Manual Training Vise, length of jaws, 10 inches, depth of jaws with facings 4½ inches, opening of jaws, 12 inches, weight 39 pounds, brass dog 1 inch square in front jaw, special ledge for maple facing

With hard maple facings, each . . . $7 50

No. 45, Rapid Acting Combination Vise with facings (not illustrated), length of jaws, 10 inches, depth of jaws with facing, 4½ inches, opening of jaws, 8 inches, weight, 41 pounds.

With hard maple facings, each . . . $8 00

This Vise is the same as the No. 40, Fig 6857, with the addition of a special ledge for maple facing

NO. 50

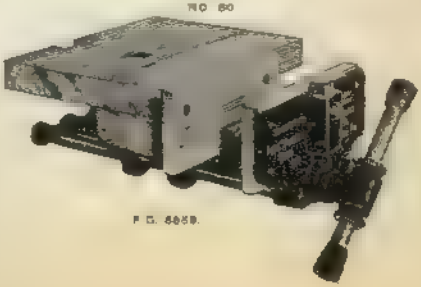
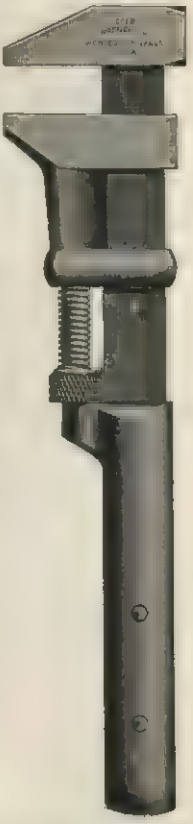


FIG. 6859.

THE FAIRBANKS COMPANY

IF you run a Garage or own an Auto, you need these wrenches.

The Key Model. (Left cut.)



28in. and 36in. long, largest nut wrench made. Strong, unbreakable, handy and cheap.

Will replace a dozen forged special wrenches.

The ★91 Steel Handle (Right cut)

in seven sizes—from 6 in. to 21 in. Heat, damp, and wear proof. Steel handle. 30 per cent stronger, size for size, than any imitation or substitute.

Every wrench fully

WARRANTED.

No advance in price.

New Catalogue now ready for distribution

Coes Wrench Co.

Worcester, Mass.,

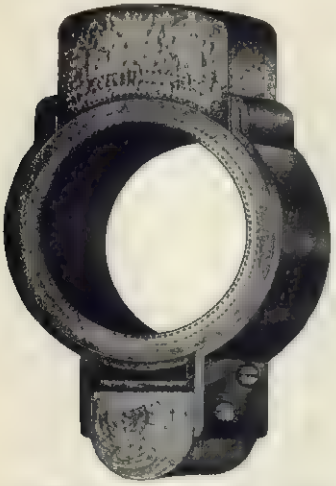
Or Your Dealer.

Ask for "Coes Genuine."

CIRCULARS

The "Elder" Patent Puncture-Proof Pneumatic Tires

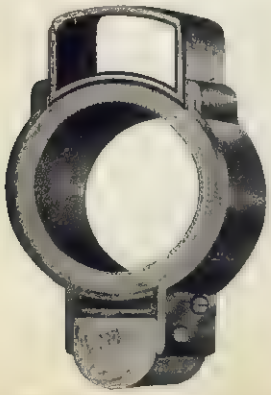
The "Elder" tires, put on the market by the Elder Mfg. Co., 2305 N. Illinois st., Indianapolis, Ind., are constructed with the view to absolutely prevent punctures and blow-outs.



The "Elder" Patent Puncture-Proof Pneumatic Tire with Rubber Tread.

These tires are made in two styles, one having a rubber tread and the other a steel tread. The Elder tire fitted with the solid rubber tread consists of a pneumatic tire resting on a steel rim and incased in two steel bands that follow the contour of the pneumatic tire until about one-third of the tread is covered, the steel bands being bolted to the rim of the wheel. In the opening left on the tread by the steel bands is placed a solid rubber tire. This solid rubber tire being very thick does not admit of the pneumatic tire being punctured on the tread; and the steel bands on the sides do not allow the pneumatic tire to come off, be punctured, worn or rim cut. The solid tire, or tread, is made slightly smaller on its inside diameter than the outside of the pneumatic tire, so that when the pneumatic tire is pumped up the solid tire will not creep. The solid tire is reinforced with two endless wire cables imbedded into the tire in the process of manufacture.

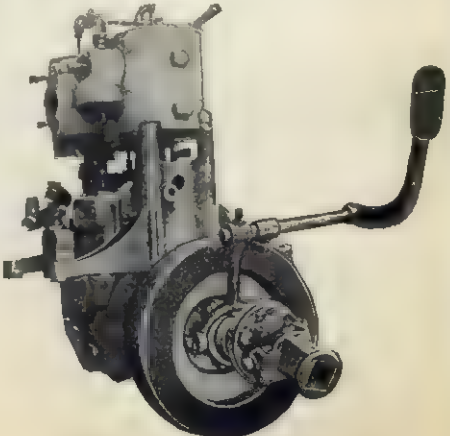
With the other type of tire, which is made with a view to cheapness, the general construction is the same, the only difference being the substitution of a hollow steel ring in place of the solid rubber tread. Although this tire makes some noise on paved streets, this is overcome to a great extent by using a rawhide or rubber cover.



The "Elder" Patent Puncture-Proof Pneumatic Tire with Steel Tread.

Disconnecting Clutch for Model 1904 White Steamers

The Portland Garage Co., Portland, Me., have placed on the market a disconnecting clutch and balance wheel, designed especially for 1904 White Steamers. The only change necessary to make, when placing this clutch in a car, is to shorten the driving shaft 7½ inches, it being possible to use the forward universal and sliding sleeve, as the clutch is specially designed to fit the White universal joint. The balance wheel is secured to the flange originally provided for the brake drum. The wheel is turned down over the forward portion of its rim to the same diameter as the brake drum, and the original foot brake is used to act on the flywheel. The pedal for operating the disconnecting clutch projects up through the footboard on the left hand side of the steering wheel, and is provided with a locking pawl for holding the disconnecting clutch out when desired. The attachment serves as a locking device when the car is left standing on the street, and it is claimed that it tends to make the car run steadier and to keep the universal joints quiet.



Disconnecting Clutch and Balance Wheel for White Steamers.

COMBINED ANVIL AND VISE.

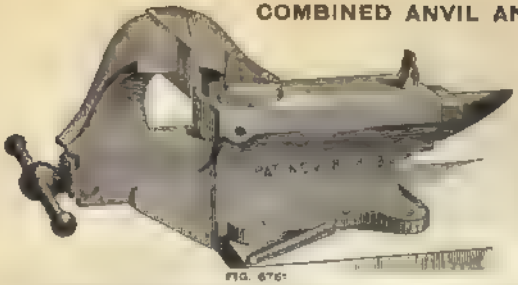


FIG. 6751.

DESCRIPTION, FIG. 6751.

Has adjustable jaws faced with steel and tempered, cutting off tool of solid steel.

PRICES, FIG. 6751.

No.	Weight, Lbs.	Jaws Width, Inches.	Opens, Inches.	Each.
1	6	2¼	3	$3 50
2	25	3½	4	4 50
3	35	4	5	5 50
4	55	4½	6	6 50

COMBINATION ANVIL, VISE AND DRILLING MACHINE.

DESCRIPTION FIG. 6752.

This tool comprises anvil, straight vise, pipe vise and drill press. Weighs 65 pounds.

The anvil is [illegible] inches long and [illegible] face, vise jaw [illegible] and opens [illegible] inches. The drill spindle is made [illegible] and has [illegible] The spindle can be slipped out of [illegible] and laid by when not using the drill.

PRICE, FIG. 6752.

Each ..... $ 0 00

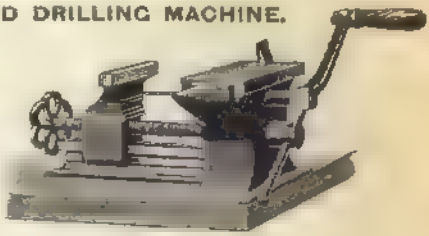


FIG. 6752.

PETER WRIGHT ANVILS.

BLACKSMITHS'.

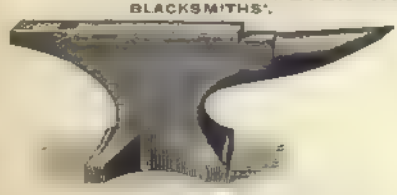


FIG. 6753.

PRICES FIG. 6753.

[illegible] per lb. $

[illegible] per lb.

[illegible] lbs. and over [illegible] cent

[illegible] lbs. and under [illegible] cents.

[illegible] lbs. and under [illegible] cents.

Weights under [illegible] lbs. and over [illegible] cents.

HORSESHOERS'. WITH CAST HORN.

FIG. 6754.

Price, Fig. 6754, per lb. $

Weights from 1½ to 150 lbs. in stock.

DOUBLE BICK ANVILS.

WITH ONE SQUARE AND ONE ROUND BICK, BOTH STEELED.

FIG. 6755.

SAW MAKERS' ANVILS.

PRICE FIG. 6755.

Weights from 84 to 350 lbs.

Per lb. $

PRICE, FIG. 6756.

Weights from 84 to 350 lbs.

Per lb. $

FIG. 6756.

EAGLE ANVILS.

BLACKSMITHS'.

FIG. 6767.

HORSESHOERS

FIG. 6768

GENERAL DESCRIPTION, FIGS. 6767 TO 6769

All Eagle Anvils are now made with the latest Fisher patent double thickness of cast steel on face, which is the Eagle Anvil trade-mark of guarantee, and which is warranted not to peel off or break. They ring much less than the old fashioned kind on account of [illegible] and last many times longer.

DESCRIPTION FIG. 6767.

200 different weights and shapes, from 10 pounds to 800 pounds. The face is one piece of best tool cast steel welded on so perfectly by a patented process that it is warranted never to come off. It is ground to a true surface, tempered with uniform hardness, and will always remain so. The steel horn is tough and unhardened and will not break nor bend in use.

PLOW MAKERS'.

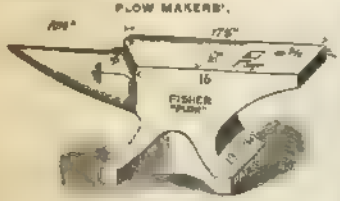


FIG. 6769.

PRICES, FIGS. 6767 AND 6768.

Weight, Lbs.	Face, Length Inches	Face, Width Inches	Cutter Hole, Square Inches	Length Horn, Inches
70	12	3	5/8	6
80	13	3	5/8	7
90	14	3	5/8	7
100	15	3	5/8	7
110	15	3	5/8	8
120	15	3	5/8	8
130	15	4	5/8	8
140	14	4	5/8	8
150	14	4	5/8	10
160	15	4	5/8	10
170	15	4	1	10
180	15	4	1	10
200	16	4	1	10
225	16	4	1	10
250	17	4	1	10
275	17	4	1	11
300	18	4	1	11
350	20	4	1	12
400	21	4	1	12
500	22	4	1	14
600	24	5	1	14
800	25	5	1	16

Anvils weighing 70 to 800 pounds, per lb. [illegible]

Hexagon or Special Sizes. The latest pattern Hexagon or Special Anvil has a [illegible] round clip on side of horn for resting, at same price as the plain hexagon list of same weight.

DESCRIPTION, FIG. 6769.

Face 4½ inches long and 4 inches wide. Steel [illegible] 4 inches wide, with steel [illegible] clip 1½ inch projection. Center hole, ¾ inch square. Taper [illegible] inch thick.

The solid steel [illegible] has a [illegible] to the best shape for horse-shoers' work and it will not crack or bend. [illegible] between the face and [illegible] shoulder which [illegible] take.

PRICES, SMALL ANVILS, MINIMS.

No.	Weight About, Lbs.	Each
000	½	$ 2 50
1	8	3 50
2	20	4 00
3	40	4 50
4	60	5 00
5	80	5 50
6	100	6 00

DESCRIPTION FIG. 6768

The steel horn is tough and unhardened, and will not break or bend. It is set low (2 inches below the face) so as to be out of the way when in use for general shoeing. Horn is of the [illegible] cut off at an angle for [illegible] convenience in [illegible] work. Anvil can be had with or without clip. Price list [illegible]. Face length 9¾ inches, width, 4½ inches, cutter hole square 1 inch. Horn length 10½ inches. Prices on application.

COLUMBIAN ANVILS.

BLACKSMITHS'.

FIG. 6780.

Made in sizes from 10 to 800 pounds.

Price, per lb. [illegible] $

FARRIERS CLIP HORN

FIG. 6781

Made in sizes from 80 to 400 pounds.

Price per lb $

THE FAIRBANKS COMPANY

COPPER TIPPED HAMMERS.

FOR MACHINISTS AND ENGINEERS' USE IN HAMMERING FINISHED WORK WITHOUT MARRING IT

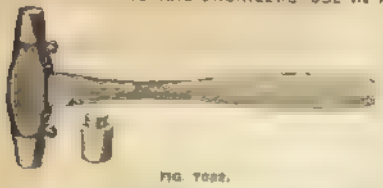


FIG. 7032.

DESCRIPTION, FIG. 7032

The hammer head is made of malleable iron into which the copper tips are fitted and held in position by a set screw. Each Hammer complete with handle and tips.

PRICES, FIG. 7032.

No.	1	2	3
Weight, ounces	12½	18½	24
Black, per dozen	$18 00	$26 40	$34 80
Nickel, per dozen	24 00	34 40	39 10

COPPER TIPS, EXTRA

No.	1	2	3
Per dozen pairs	$3.00	$7.20	$9 40

COPPER HAMMERS.

FIG. 7033.

PRICES, FIG. 7033.

Weight, lbs.	1	1½	2	2½
Per lb.	$3	$3	$3	$3
Weight, lbs.	3½	4	4½	5
Per lb.	$3	$3	$3	$3
Weight, lbs.	7	8	9	10
Per lb.	$3	$3	$3	$3

BRASS HAMMERS.

NO. 92

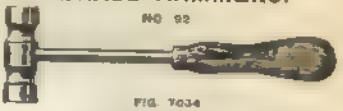


FIG. 7034

PRICES, FIG. 7034

No. 91, polished brass head, 1½ x 1½ inches, polished steel handle with [illegible] length over all, 9 inches, weight, 3 ounces, each $0 35

No. 92, polished brass head, 1½ x 2 inches, polished steel handle with [illegible] length over all, 9 inches, weight, 4 ounces, each 40

No. 93, polished brass head, 1½ x 2 inches, steel shank and handle [illegible] length over all, 9 inches, weight, 6 ounces, each 45

No. 94, polished brass head 1 x 3 inches steel shank and [illegible] length over all, 9 inches, weight, 14 ounces, each 60

RUBBER HEAD MALLETS.

DESCRIPTION, FIG. 7035.

FIG. 7035

[illegible] the patterns. They are also useful [illegible] Each mallet fitted with a [illegible] handle.

PRICES, FIG. 7035.

No.	1	2	3
Weight, lbs.	1½	1¾	2½
Per dozen	$15 00	$20 00	$25 00

COMBINATION MOULDS AND LADLES.

FOR CASTING SOFT METAL HAMMERS AND VISE JAWS.

DESCRIPTION, FIG. 7036

By simply raising the mould to a horizontal position, all the metal in ladle when melted will flow into the mould. Furnished with pair of tongs and ladle.

PRICES, FIG. 7036

Mould and ladle complete, with one lead hammer weighing 3½ lbs.	$1 50
Mould and ladle complete, with one lead hammer weighing 6 lbs.	2
Cast hammer above, weighing 3½ lbs.	0
Lead hammer above, weighing 6 lbs.	60
Aluminum hammer, weighing 2½ lbs.	60
Handles, per dozen	2 50

FIG. 7036.

Showing Mould for hammers open with the handle in place

SAW MAKERS' HAMMERS.

SQUARE FACE HAMMER.

FIG. 7037

PRICE, FIG. 7037

Per lb. $0 35

Furnished any weight desired.

ROUND FACE HAMMER

FIG. 7038

PRICE, FIG. 7038.

Per lb. $0 40

Furnished any weight desired.

SWAGING HAMMER.

FIG. 7039

PRICES FIG. 7039

⅝ inch hammer, each	$ 50
[illegible] inch, each	35
[illegible] each	1 50

THE FAIRBANKS COMPANY

RAWHIDE MALLETS.

FIG. 7026.

DESCRIPTION, FIG. 7026.

These are light Mallets, made entirely of hide, except the handle, and suited to a variety of uses.

PRICES, FIG. 7026.

No.	0	1	2	4	6	8
Diameter of face	1	1⅛	1½	1¾	2	2½
Length inches	2¼	2¾	3	3½	4¼	4¾
Weight ounces	1½	3¼	4	7½	14	28
Per dozen	$3 20	$1 00	$4.50	$5 00	$7 20	$ 6.00	$20.00

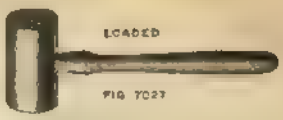


FIG. 7027.

DESCRIPTION, FIG. 7027.

These Mallets have a central strip of soft metal rolled up with the hide; the weight is doubled without increasing the size.

PRICES, FIG. 7027.

No.	7	8	9	10	11
Diameter of face inches	1¾	1½	1¾	2	2½
Length of face	2½	3	3½	3½	4
Weight ounces	7	10	13	20	32
Per dozen	$4 80	$5 80	$6 40	$8 00	$10 00

HIDE FACED HAMMERS.

FIG. 7028.

DESCRIPTION, FIG. 7028.

These Hammers are invaluable for machinists, workers in brass or silver, jewelry manufacturers, or for anyone who needs to strike a hard blow without bruising the material he is at work upon. When worn out, the faces are renewed. The new faces need no fastening except a tight fitting on the shell.

PRICES FIG. 7028.

Without extra faces.

No.	0	1	3	2	4	5
Weight, lbs	¼	½	1	2	4	5½
Diam. face inches	1	1¼	1½	1¾	2	2½
Per dozen	$3 00	$3 45	$ 2 00	$14 40	$20 80	$30 00
Faces, per doz. pairs	2 40	2 85	3 20	4 00	5 80	9 00

No. 0 has a shell or casing of bronze.

RAWHIDE CAPPED MALLETS.

FIG. 7029.

DESCRIPTION FIG. 7029.

These Rawhide Capped Mallets are largely used by the woodworking, printing and allied trades. They are very durable and positively will not split.

PRICES, FIG. 7029.

Size face, inches	3	3½	4
Per dozen	$7 50	$9 00	$11. 00

VULCANIZED FIBER HEAD MALLETS.

FIG. 7030.

DESCRIPTION, FIG. 7030.

The heads of these Mallets are vulcanized fiber. Handle screws in. The heads are of malleable iron, riveted to the body and tapering on the inside to hold the fiber heads firmly in place.

PRICES, FIG. 7030.

No.	2	3½	3	3½
Size face inches	2	2½	2	2½
Per dozen	$6 50	$7 50	$9 00	$13 00

IMPROVED FIBER FACED HAMMERS.

FIG. 7031.

DESCRIPTION, FIG. 7031.

These Hammers are made of steel and malleable iron. The rings that screw on at each end have an inside flange that holds the fiber faces in their place. When these faces are worn out from use, they can be quickly removed by unscrewing the rings with the spanner wrench that is furnished with each hammer and new ones inserted. One pair extra faces is furnished with each hammer.

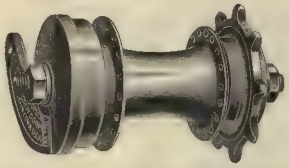
PRICES, FIG. 7031.

Weight, ounces	5	7	14	24
Diameter face inches	½	1	1¼	1½
Each	$0 60	$0 80	$0 95	$1 20
Per dozen	6 00	8 00	9 50	12 00
Extra faces, per dozen pairs	50	60	75	1 00

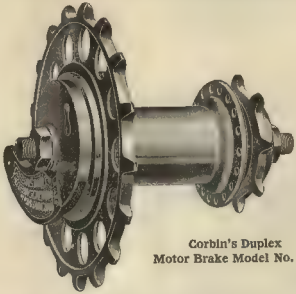
CORBIN'S DUPLEX

NEW DEPARTURE

COASTER BRAKE



Corbin's Duplex Coaster Brake, Model No. 6



Corbin's Duplex
Motor Brake Model No. 5 B

Our line is now complete and we are prepared to furnish brakes for any wheel or motor cycle on the market.

Our 1906 Catalogue will be ready Jan. 1st.

The Corbin Screw Corporation

NEW BRITAIN, CONN.

DIRECT GEARED, TYPE A, ENGINE AND HOIST.

DESCRIPTION FIG 10245

This cut shows another combination outfit furnished with our Type A Engine described on page 1292

Special catalogue on hoisting outfits mailed on application

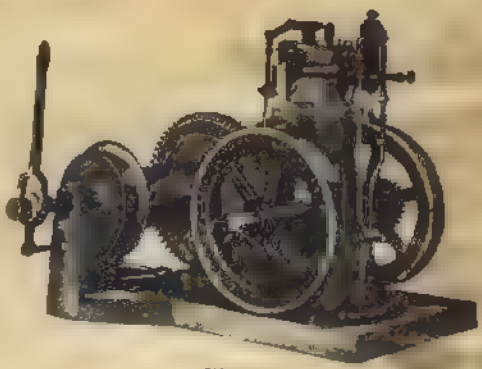


FIG. 10245.

VERTICAL GAS ENGINE, TYPE B.

13 H P. VERTICAL, TYPE B

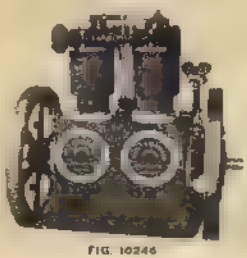


FIG. 10246

13 H P. VERTICAL, TYPE B

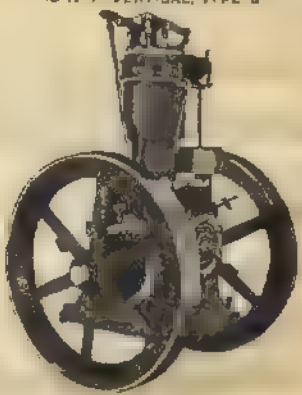


FIG 10247

DESCRIPTION FIGS 10246 AND 10247

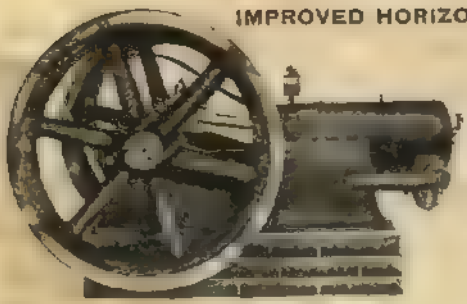
This Engine is built for the hardest kind of service, and where the closest possible speed regulation is demanded. It has inclosed crank case, splash lubricating system, offers a choice of hit and miss or throttling governor and of the make-and-break or jump spark ignition.

Its speed can be varied within certain limits and pulley can be applied to either side. It can be equipped to run with gasolene, manufactured natural or by-product gas, distillate, or alcohol as fuel. It is very strong having heavy frame, large working parts and long bearings. The speeds range from 275 to 450 revolutions per minute and can be extended for the 15 horse power upward in multi cylinders, our speeds of horse power upward to suggested. The type of engine is especially adapted to electric lighting work or other service where a varied or best load

The single cylinder Engine can be had with base cut off at bottom for crank case, in which form it becomes especially adaptable to marine service, making it possible to mount it low down and prevent all possibility of its being top heavy.

We have a special catalogue describing fully the Type B Engine which we will be pleased to send on request

IMPROVED HORIZONTAL GAS ENGINE.



DESCRIPTION FIG. 10248

[illegible] without add tional parts

FIG. 10248

PORTABLE HORIZONTAL GAS ENGINE.

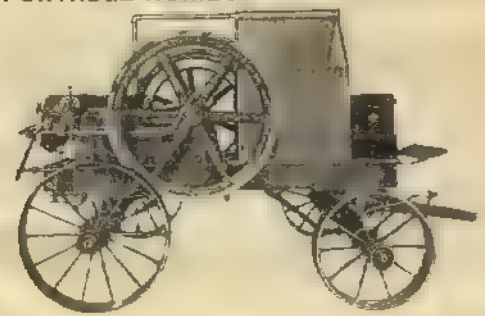


FIG. 10249

GAS ENGINE AND PUMP, DIRECT CONNECTED.

DESCRIPTION FIG. 10250

We [illegible] our [illegible] extensively with pumps where [illegible] from 10,000 to 150,000 gallons per hour and [illegible] at [illegible] pressure [illegible]

These combinations give greatest possible efficiency with minimum floor space [illegible]

Special catalogues and bulletins [illegible] buy engines and outfits will be sent free on application.

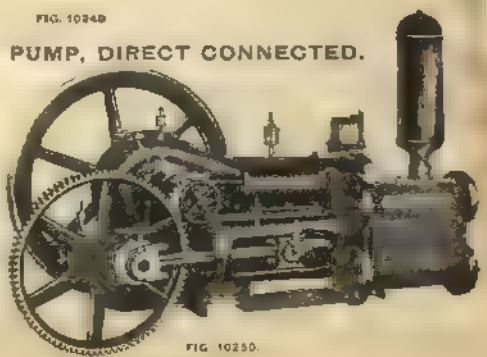


FIG. 10250.

THE FAIRBANKS COMPANY.

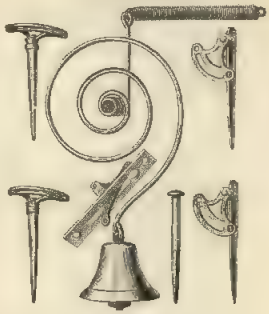
BELLS.

ALARM DOOR BELLS.

Japanned steel spring

No. 133. No. 3 Polished Bell. Diameter of mouth, 2⅝ inches
Per doz.. .. ..**$13.50**

HOUSE BELLS ON CARRIAGES.



No 123 Complete

No. 123. Complete, as cut shows No 3 Polished Bell. Diameter of mouth, 2⅝ inches
Per doz.. .. ..**$11.40**

ALARM DOOR BELLS.

Nichols' Patent.

BRONZED STEEL.

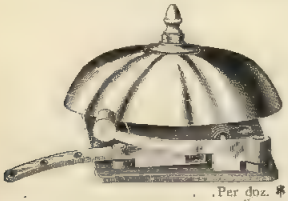
4 inch.. .. ..Per doz **$ 5.00**

POLISHED BELL METAL.

4 inch.. .. ..Per doz. **$10.00**

TRIP GONG BELLS.

Polished Bell Metal
All sizes above 8 inches have Wood Hammers



4 inch	. . .Per doz.	**$ 12.50**
5 inch	"	**16.50**
6 inch	"	**24.00**
8 inch	"	**46.00**
9 inch		**70.00**
10 inch		**84.00**
12 inch.. .		**150.00**

BRASS HAND BELLS.

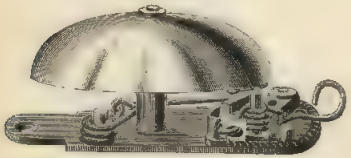
Fine polished with enameled wood handles

Fig. **136.**

No. 0.	Diameter at mouth, 2 inches	**$ 2.00**
No. 1.	" " 2⅜ "	**2.62**
No. 2.	" " 2⅝ "	**3.50**
No. 3.	" " 2⅞ "	**4.50**
No. 4.	" 3⅛ "	**6.50**
No. 5.	" 3¾ "	**8.50**
No. 6.	" 4 "	**11.25**
No. 7.	" 4⅜ "	**13.75**
No. 8.	" 5 "	**18.50**
No. 9.	" 5⅜ "	**24.00**
No. 10.	" 5-15 16 "	**30.00**
No. 11.	" 6⅜ "	**34.00**
No. 12.	" 6½ "	**36.00**
No. 13.	" 7 "	**42.00**
No. 14.	" 7 "	**48.00**

GONG HOUSE BELLS.

Nichols' Patent.



BRONZED STEEL.

3 inch.. ...Per doz **$4.00** 4 inch.....Per doz **$5.00**

POLISHED BELL METAL.

3 inch.....Per doz. **$8.00** 4 inch.....Per doz **$10.00**

BELLS.

"DAISY" CALL BELLS.

Base and Gong wrought steel

No. 80. Nickel plated, 3 inches diameter, enameled base.
Per doz. **$1.25**

No. 82. Nickel plated, 3 inches diameter, finely polished.
Per doz **$1.66**

"DAISY" CALL BELLS.

Base and Gong wrought steel. Finely polished
Heavily plated

No. 72. Nickel plated, 3½ inches diameter
Per doz. **$2.50**

"DAISY" CALL BELLS.

Cast bell metal. Nickel plated. Gilt iron base

No. 81. Diameter of base, 3½ inches . . . . . Per doz. **$8.50**

SCHOOL AND HOTEL CALL BELLS.

Turned and polished brass base. Made from pure bell metal.

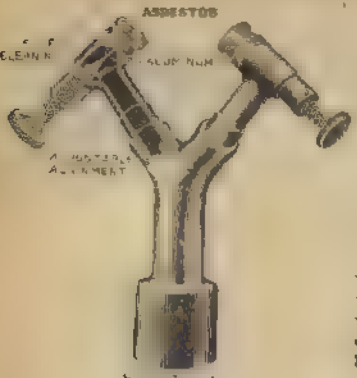
No. 101. 5 inch bell, 6¼ inch base Nickel plated
Per doz. . **$43.00**

"DAISY" CALL BELLS.

Bronzed base Cast bell metal gong.

No. 96. Diameter, 4 inches. Nickel plated
Per doz. **$5.00**

DRAKE'S ADJUSTABLE SELF CLEANING BURNERS



No. 1. -Made in 3-4 and 1 foot sizes only. Has adjustable aligoment. Either side may be turned off and the other side turned down for a pilot or night light

A Very Important Discovery

Carbonize or blacken this ASBESTOS T[illegible] supplied in ALUMINUM, in any way, and it will burn off clean to white in a few minutes will not carbonize at all use with [illegible] long will not work under heavy pressure. Can be turned [illegible] the same as other gas with [illegible] tip to

[illegible] of parts of [illegible] tal or soapstone tips. Is very durable and should last for years

PRICE No. 1 ..... **$6.50 dozen**

[illegible] Drake's Adjustable Burners, Give the number [illegible] Is [illegible] by express [illegible]

PRICE No. 2, $5 00 doz. Extra Lava Tips, old style, 70c doz

Acetylene Gas Burners

For Bicycle, House and Carriage Lamps. The Crescent and [illegible] Burners [illegible] before leaving factory.

Bicycle Tips

1-4 foot

Price ..... **$1.50 dozen**

Lamp Tips

On Pillar, 1-2 3-4, and 1 foot

Price ..... **$4.00 dozen**

Special quotations for gross lots

Yankee

Solar Carbide Bicycle Size

Solar Brand Carbide is best quality manufactured, and will be found uniform and reliable

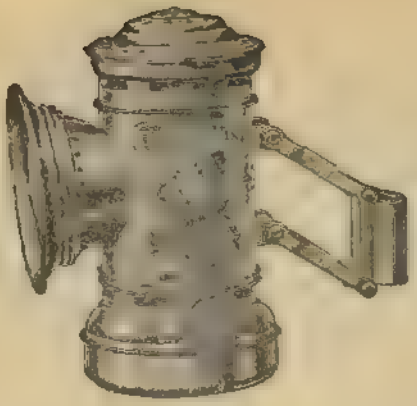
PRICES

lbs. Cans	
[illegible]	$1.00 dozen
2 "	1.20 "
5 "	2.50 "
100 "	9.00 each

We can supply carbide in large lumps for house generators, and granulated or portable lamps, at the same prices.

NOTE. -For quantity buyers we [illegible] special prices F. O. B. Factory

See [illegible] page 6, [illegible] Discount sheet next back cover



THE LIGHT WEIGHT LANTERN

The Light Weight Bicycle Lamp for [illegible] many desirable improvements, and [illegible]ered to the trade as the best cheap oil lantern produced. It is attractive and well proportioned. The 2½ inch hinged plano convex lens in conjunction with the highly polished reflector mak[illegible] a brilliant light.

PRICE .. .. $1.80 each

The Panther Gas Lamp

The P[illegible]ther is an English Gas Lamp of approved design. It is fitted with a pencil tip, and consequently burns less gas than the fish-tail burner lamp while the light given is ample. Constructed in the usual substantial British manner, being made entirely of brass and well nickeled. P[illegible]d in attractive cartons and excellent value at the price we name.

PRICE $1.90 each

Columbia Automatic Gas Lamps

WATER FEED.—Automatic, i. e., requires no regulator. Water flows proportional to flame set.

WATER VALVE is self-cleaning; only perfect working valve made.

GAS VALVE regulates size of flame, high or low; only lamp on which you can regulate the flame to suit.

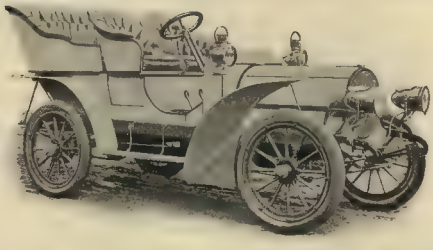
WATER DISTRIBUTOR. Our patented [illegible]ged water distributor is the most perfect [illegible]. No carbide is wasted, and charge can be used repeatedly until exhausted.

CARBIDE CAN is telescopic and dust-proof; is a reloadable cartridge in fact, and can be [illegible]ried in the pocket, loaded without detriment to charge; is easily c[illegible]rged, and cleaned as a teacup.

PRICE .. .. $4.50 each

See Terms page 3, and Discount sheet next back cover.

Starts from the Seat
No Crank Necessary
A Foot Lever Does It



DUQUESNE

4 CYLINDER 4 CYCLE 16-21 HORSE POWER

SIMPLICITY must be the watchword of automobile builders wishing to construct a car that will stand the test.

Air-cooling is the simple way, because it does away with water tank, water pipes, radiators and pump; lightens the load on the tires and eliminates freezing in cold weather.

The DUQUESNE is not a racing car. It was designed especially to stand hard usage. Will take the ordinary country roads at from five to twenty-five miles an hour with five passengers. Will climb ordinary hills on high speed and any hill on low speed, and on paved streets and level roads will do forty miles an hour.

Direct drive with vital parts encased and running in a bath of oil is superior to the chain system with "sand shower" lubrication.

Starting the engine with a foot lever is better than the old style of "cranking."

The DUQUESNE motor is air-cooled; requires no cranking; starts from the seat by a foot lever—a lady can start it.

Weight, 1750 Pounds **Price, $2000**

We are offering a very attractive agency proposition. Write.

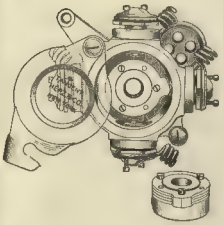
Duquesne Construction Co.

JAMESTOWN, N. Y.

A Blind Man

Can See the Superiority of the

HERZ-TIMER



over any other circuit breaker on the market. We have now 17 different Models adapted to the various motor constructions. **"Tangent"** is the LATEST Model; all contacts are individually adjustable, according to the different compressions in the cylinders of multicylinder engines.

The body is aluminum. Contacts laminated (patented).

NO BEARING. NO WEAR.

The principles are always

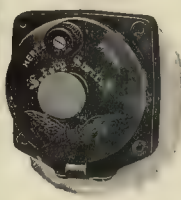
TOOLSTEEL vs. TOOLSTEEL

Snap off contacts. The quick break of the contact preventing sticking vibrators no matter what coil is used. We have thousands of testimonials from all parts of the world.

A Declaration of War against Bad Ignition

We will improve and increase the spark in the motor by 100 per cent. read: **One hundred per cent.** by application of our new patented **Steel Armored Ignition Cables and Wire** approved of and adopted by the most prominent automobile factories in France and Germany. Furnished only in complete wiring outfits with all terminals.

"Puck"



A switch with its contacts, under dust proof and water proof engraved metal cover; exclusive design; most elaborate workmanship imaginable.

NOTHING on the market to compare with it

Bougie Mercedes

Absolutely the best spark plug made. Absolutely self cleaning. DOUBLE STONE. Will never crack. Guaranteed for 6 months.

Write for testimonials.

Some people use them for 2 years without taking them out of engine.

The greatest value ever offered.

Price, $2

The Largest Makers of High Grade Ignition Material in America.

HERZ & CO.,

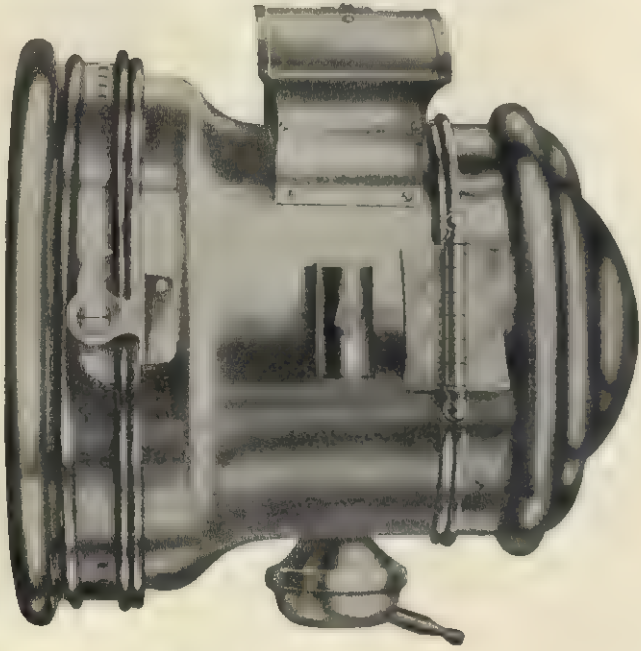
CIVIL ENGINEERS

Write for the newest catalogue. Do it now!

187 Elm St., New York

"E. & J." Lamps

Like all "E. & J." Lamps they have **"Quality," "Finish"** and produce the **"Light"** Features throughout that places them in the exclusive class and makes their **distinct superiority unquestioned.**



Specify "E. & J." Lamps for your Car, thereby securing the **"Best."**

1907 models now ready for delivery.

The Edmunds & Jones Mfg. Co.

DETROIT, MICH.

BUSINESS IS PLEASURE

Mr. Dealer, when you handle

NON-FLUID OILS

They are well known.
They are well liked.

They are recommended by upwards of twenty leading auto manufacturers.
Hence they sell readily without persuasion or argument.

NON-FLUID OILS

Never get dusty on your shelves—they don't stay long enough! Order a case and see!

NEW YORK & NEW JERSEY LUBRICANT COMPANY

14 & 16 Church Street, New York
79 Ninth Street, San Francisco
(Will exhibit at New York Shows and Chicago Show)

REMEMBER—

WE MAKE THE BEST
BEST IS THE CHEAPEST
— IN THE END —
INSIST ON YOUR CAR
BEING
EQUIPPED
WITH
"E & J LAMPS"
THERE IS A
DIFFERENCE"
CATALOG
OF LATEST MODELS
MAILED ON REQUEST

E & J

THE EDMUNDS & JONES MF'G. CO.
DETROIT, MICH.

CARPET BEATERS AND STRETCHERS.

"ELY'S" DANDY RATTAN CARPET BEATER.

Is made of the best German rattan round reed, and is 3½ feet long

Per doz. . . . . $. . .

"ELY'S" DANDY CARPET AND RUG BEATER No. 3.

This beater is made from the best coppered steel spring wire. It is fastened into the handle with a hooking device that fastens so securely that we guarantee it not to pull out.

Per doz. . . . . $. . .

"ELY'S" DANDY CARPET AND RUG BEATER No. 4.

This beater is made of three No. 12 steel spring galvanized wires, and will not rust. The elastic properties given to it in its formation prevent its breaking at the handle, its braids acting as a spring which compensates for any vibration

Per doz . . . . . $ . . . .

"GEM" CARPET BEATERS.

Made of No. 10 wire, coppered. Notice that one wire passes completely through the handle and a ring turned on it, absolutely preventing it from ever coming out.

Per doz . . $

"ELY'S" DANDY CARPET AND RUG BEATER No. 6.

One of the best single beaters made, as it has the double coil spring, also the projection at the handle keeps the knuckles free from the carpet and allows the beater to strike the carpet.

Per doz. . . . . $. .

CARPET STRETCHERS.

"BULLARD'S" CARPET STRETCHERS.

Compact, no pieces to loose, always ready for use

Per doz. . . . . $ . . .

"POTTER'S" CARPET STRETCHER No. 2.

Solid malleable iron casting with socket, full polished (extra finish), and teeth well ground and sharpened.

Per doz. . . . . $. . .

CIGAR KNIFE AND KNIFE CASES.

THE EMPIRE "EASY OPENER CIGAR KNIFE."

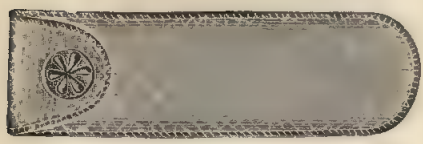
A perfect Cigar Knife that can be opened without the use of a finger-nail No buttons to press or projections to slide It is simply an ordinary pocket knife—but by a very unique and ingenious invention (simply pressing the blade where one ordinarily picks it open with the finger-nail) the cigar blade will spring open ready for use—making without doubt the most handy and practicable knife ever invented for smokers who desire to cut the ends of their cigars rather than to bit them, or use an ordinary knife This knife contains the cigar blade, a manicure blade, and an ordinary pocket knife blade, and is made from the English Sheffield Crucible cast steel imported. Every one is positively guaranteed.

PRICES AS FOLLOWS:

No. 039. Stag. . . . . Per doz. $. . . . . .
No. 039B. With Bail Stag. . . . . " . . . . . .
No. 039½. German Silver . . . . . " . . . . . .
No. 039½B. With Bail German Silver . . " . . . . . .
No. 040. Pearl. . . . . Per doz. $. .
No. 040B. With Bail Pearl . . . . . "
No. 040. Sterling Silver. . . . . " . . . . . .
No. 040B. Sterling Silver Bail. . . . . " . . . . . .

KID AND CHAMOIS KNIFE-PURSES.

No. 3B.



No. 5B.

They're made from selected kid, buckskin and chamois skins, and we warrant them not to tarnish or rust the metal trimmings or steel parts of the knives Made with glove button and clasp fasteners or plain Packed in solid or assorted sizes "B" indicates Glove-button. "C" indicates Clasp. "P" indicates Plain.

No. 100. Kid Skin. . . . . Per gro. $. .
No. 200. Buckskin, Chamois Lining. . . . . "

ENTERPRISE SAUSAGE STUFFER, LARD AND FRUIT PRESS.

PRICES, F. GS. 10200 AND 10201

TINNED

No.		Each
	4 quart, rack	$4 [illegible]
[illegible]	6 quart, screw	5 00
30	6 quart screw	[illegible]
[illegible]	40, 8 quart screw	[illegible]

JAPANNED

No.		Each
[illegible]	4 quart, rack	$[illegible]
[illegible]	6 quart, screw	[illegible]
[illegible]	[illegible] quart screw	5 50
[illegible]	8 quart screw	7 50

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] 40 [illegible] [illegible] [illegible]

RACK MOVEMENT.

FIG 10200

SCREW MOVEMENT

FIG 10201

SAUSAGE STUFFING ATTACHMENTS.

FIG 10202.

PRICES, F G 10202

For chopper, No.	[illegible]	5	10	12	20
[illegible] inch, per dozen	[illegible]	$[illegible]	$[illegible]	$[illegible]	$[illegible]
1½ inch, per dozen	[illegible]	9 00	9 00	9 00	10 50
For chopper No.	[illegible]	20	30	41	42, 43, 44, 45, 53
¾ inch, per dozen	[illegible]	$7 50	$9 75	$9 75	$[illegible] 00
1½ inch, per dozen	[illegible]	10 50	13 50	13 50	37 50

ENTERPRISE SMOKED BEEF SHAVERS.

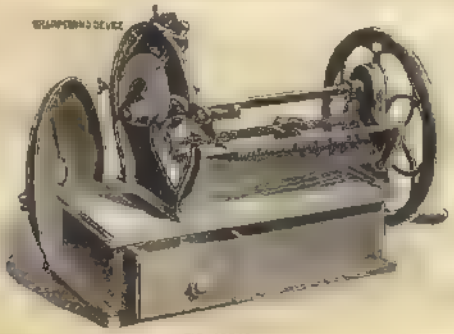


FIG 10203

FIG 10204.

PRICES, FIG 10203.

Length 30 in., width, 16 in., height 31 in., weight 89 lbs.

No. 195, with 2 blades, each	$22 50
No. 199, with 1 blade, each	22 50

PRICES FIG 10204.

No. [illegible] per annum, each	$8 00
No. [illegible] [illegible] each	1 [illegible] 50

[illegible] packer.

QUAKER CITY GRINDING MILLS.

WITH DOUBLE REDUCTION GRINDING CONES FOR HOG DRY SUBSTANCES ONLY

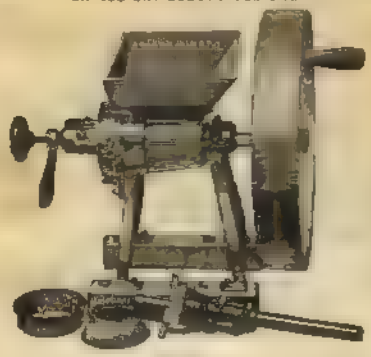


FIG 10205.

DESCRIPTION FIG 10205

PRICES FIG 10205.

WITH DOUBLE REDUCTION GRINDING DISCS

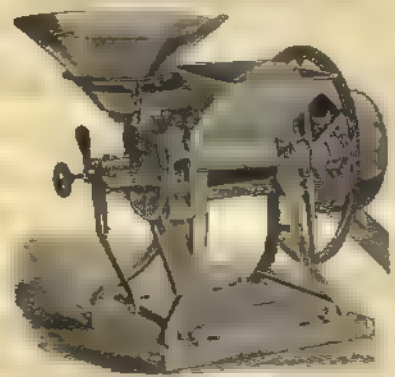


FIG 0207

Side view of Nos. 10 and 11 without hopper.

Height to top of hopper

PRICES FIG 0207

WITH DOUBLE REDUCTION GRINDING DISCS.

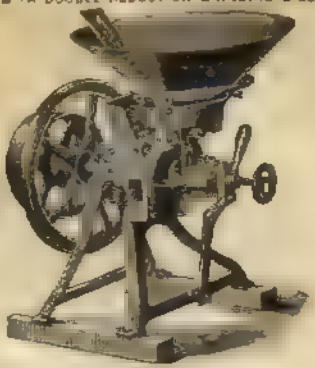


FIG 10206

DESCRIPTION FIG 10206

PRICES FIG 10206

No. 6 M II. ... each $45 00

Extra ... per pair 1 50

DOUBLE QUAKER CITY GRAIN MILLS.

FOR CORN AND COBS, FEED AND TABLE MEAL.

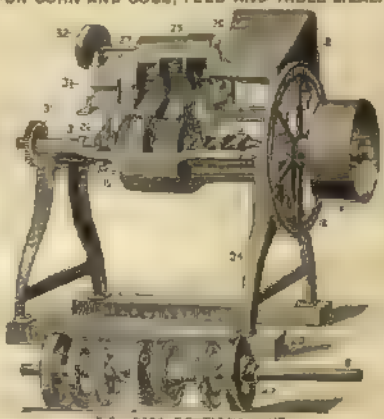


FIG 0208 SECTIONAL CUT

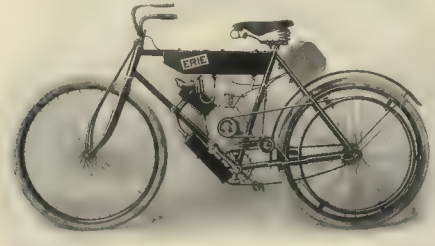
DESCRIPTION FIG 10208

PRICES. FIG 0208

THE FAIRBANKS COMPANY

1906 Improvements of the Erie Motorcycle

The Motorcycle Equipment and Supply Co., 934 Main street, Buffalo, N. Y., besides improving their motor cycle power outfits, are this year offering complete motorcycles, both belt and friction driven. The power of the

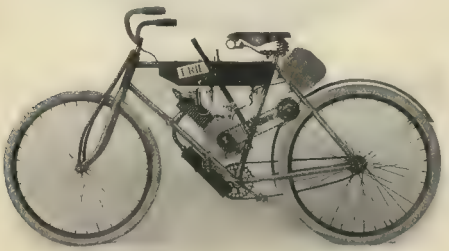


The 1906 Erie Belt Driven Motorcycle.

motor has been increased from 1¾ to 2 H. P., and it is fitted with a new bearing composed of a special hardened tool steel sleeve forced over the crank shaft and running in phosphor bronze bushings in the crank case. The main bearings are 1 3-16 in. long. Engine is 25 lbs. weight, and is 15½ in. high. Crank shaft is ⅝ in. diameter. A standard size

velops speeds up to 32 miles per hour. The spark advance lever is situated on the top of the tank and the grip switch on the left handle bar. The sight feed oiling device holds enough oil for 150 miles running instead of 100 miles as in the old outfit. The equipment includes a Mesinger saddle and a truss fork. These machines have 50 in. wheel bases, 22 in. frames and weigh 85 pounds each.

The Erie 1906 Power Outfit for converting an ordinary bicycle into a motorcycle is the same as is used on the regular motorcycle, and will fit any size of frame from 21 to 26 inches. A special size of tank is made for 20 in. frames.

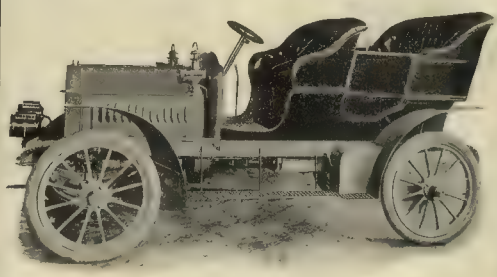


The 1906 Erie Friction Driven Motorcycle.

battery and steel battery box is used. Goodrich 1¾ in. tires are fitted. The tank is attached to the top tube. The friction drive consists of a chain driven friction roller resting on the rear wheel, which can be attached to a bicycle without altering the frame. This model develops a speed of from 1 to 32 miles per hour, while the belt driven machine de-

By the use of the free wheel transmission the engine can be stopped or started independent of the machine, and the engine can be free and left running if going through a crowded thoroughfare. The motor can be tested without propping up the rear wheel, and the motorcycle can be started the same as a bicycle without the engine running.

THE 1906 CRAWFORD



4 Cylinder. 24-28 H. P.

Cylinders, 4½x4½ inch (individual).

Weight, 2100 lbs. **Price, $2000.00**

Unequalled for price, and for satisfactory service not excelled at any price.

....Specialties....

All working parts integral with chassis, so that same can be operated with body removed. Chains covered by leather boots. Rear hub has long sleeve that carries the sprocket and drum, and is supported by a four-inch roller bearing, which brings the chains in close to the frame, entirely out of the way of the running board and step to side entrance, without the disadvantages of overhang. Strut rods are attached to separate ball bearings on cross shaft so that no movement of the springs can cause the chain to either tighten or loosen.

The LUBRICATION is by force feed. FOUR POWERFUL BRAKES. TRANSMISSION, sliding gear. Three speeds forward and reverse, operated by single lever. Special construction of great merit. WHEEL BASE, 100 inches. Absolutely the best proposition of the year. Write for further details.

Crawford Automobile Co.

Hagerstown, - - Md.

We will exhibit at the Show of the A. C. A., to be held in New York January 15-20, at the Sixty-ninth Regiment Armory

Agents for New York and vicinity, NEW AMSTERDAM MOTOR CO., 152 W. 56th Street

EVER READY

THE FAMOUS EVER READY ELECTRIC LIGHT

EVER READY

EVER READY

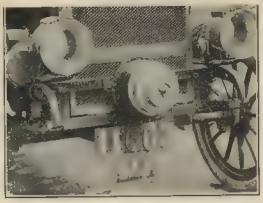
EVER READY

Start Your Motor From the Seat

Broken bones, bad temper and other cranking troubles removed by using the

Ever Ready Automatic Starter

It will be one of the great sensational features shown at the Ever Ready Exhibit, Concert Hall Stage, Madison Square Garden Automobile Show. **Don't Fail to Investigate.** It is absolutely the most essential and important attachment for an automobile that has so far been produced. It is a success and we can prove it. Get your order in at once, for the demand is sure to exceed the supply.



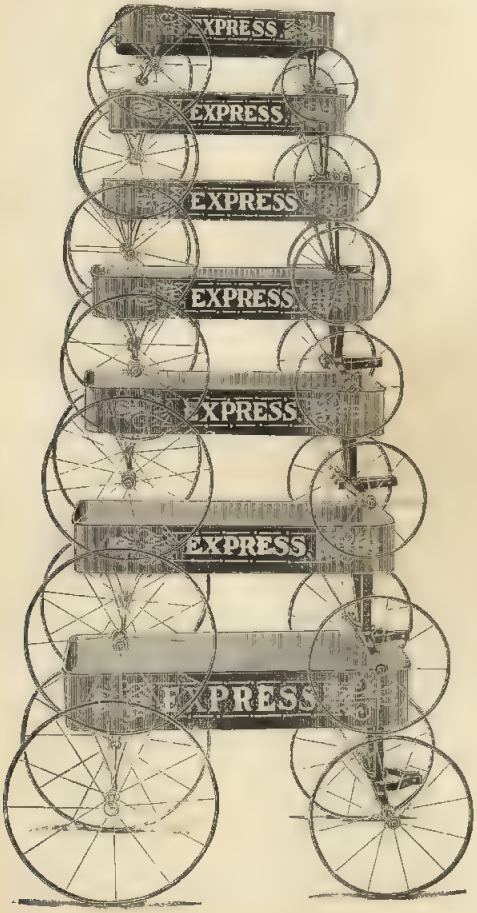
The Ever Ready Engine Starter in place on the front of a car.

American Electric Nov. & Mfg Co.

304 Hudson Street – New York City

BOYS' WAGONS.

Description of Wagons.



We desire to call your attention to our new line of Steel Express Wagons. We have entirely reconstructed our wagon, making it by far the strongest wagon that is now on the market. We have placed a double corrugation running all the way round the box about one inch from the top, on Nos. 0, 1, 2 and 3, thus giving these boxes double strength. We are also using a poplar bottom, tongued, grooved and glued, with two heavy, hardwood cleats, 1½-in. x ⅜-in., nailed to each end of the bottom, and the gear attached thereto. By reinforcing our wagons in this manner you can readily see that we have overcome what has heretofore always been a very weak point in steel wagons.

They are finished in a handsome red enamel on the outside, green enamel on the inside, and stencilled in gold, making them very neat in appearance. The gear is made of heavy band steel, no light stampings or malleable entering into its construction. They are neatly finished in the best of black baking enamel. The wagons are all hand painted, and no expense is spared in either the finish or construction of this line.

They are crated in ½-dozen combination crates, with front and rear wheels packed inside of the bodies.

(**For sizes and prices, see next page**).

BULBS

Chemically cured, soft pliable and tough for French, German or American horns.

REEDS

Non-corrosive vibratory metal composition reeds; which are not affected by weather.

BRASS FLEXIBLE TUBING

For Horns and Speedometers

"FARO"

The most perfect Alpha type lamp; imported genuine optical lenses; opens back and front; convexed beveled front glass. A very powerful light

"JAP"

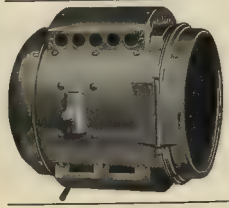
An entirely new design, latest Parisian creation; French optical front glass throwing light half-mile.

SUPERIOR TO ANY OTHER LAMPS

Jobbers and manufacturers are invited to write for quotations

AUTOMOBILE SUPPLY MFG. CO., Brooklyn, N. Y.

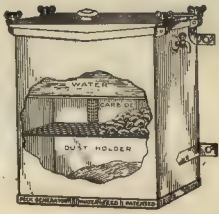
PECK PILOT LAMPS



ARE the strongest and most powerful that can be put on a car. Count the rivets you can see, then double the number:—This is one of the many reasons.

We guarantee satisfaction to the man who insists on a

PECK EQUIPMENT.



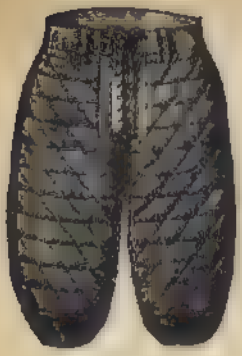
THE PECK GENERATOR

has won a National reputation. Simple—Easy to care for—Ready to use at all times. One charge will supply 2 lamps for three nights. Beware of imitations—they don't work as well as the genuine.

Prices on request.

The Scoville & Peck Co.

NEW HAVEN, CONN.



Canvas Pants

No. 1—Heavy Canvas, full quilt, padded.

Price .. .. $2.00 per pair

No. 2.—Heavy Canvas, half quilt, padded.

Price .. .. $1.50 per pair

No 3

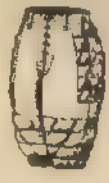
Half padded at hips; best canton flannel

PRICE, $2.00

No. 4

Padded at hips and knees; our special League pattern and a perfect design.

PRICE, $2.00



Hockey Pants

Made of Canton Flannel. Light weight, not padded. All sizes.

Price .. .. $1.20 per pair

Canvas Jackets

No. 1—Heavy Canvas with sleeves

Price . $1.50 each

No. 2. Heavy Canvas, no sleeves

Price .. $1.20 each

Combination Football Suits

Jacket and Padded Pants combined by webbing.

Price .. .. $3.00 per suit

Gymnasium Jerseys

Sleeveless

Cotton Thread

White, Maroon, Navy .. 80c.

¾ sleeve

Gymnasium Tights

Cotton Thread

White, Black, Navy, Maroon.

Price .. 80c

Leather Wrist Supporters

A perfect support and protection to the wrist. Invaluable to baseball, tennis and cricket players, or in any game where the strain is on the wrist. In domestic grain leather; tan, orange or black.

No. 00 Price .. .. 54c each

Lower Abdomen Protector

Heavy wire, padded and lined with lamb's wool.

No. 4.—Price .. .. $4.00 each

FOOTBALLS

Rugby Footballs

Made throughout from the finest oak tanned cowhide. Every ball guaranteed to preserve its shape in any weather. Fitted with first quality Scotch Rubber bladder.

Sizes	No. 4.	No. 5.	No. 6.
Price	**$3.50**	**4.00**	**4.50**

Association Footballs

Made throughout from the finest oak tanned cowhide. Every ball guaranteed to preserve its shape in any weather. Fitted with first quality Scotch rubber bladder.

Sizes	No. 4.	No. 5.	No. 6.
Price	**$3.50**	**4.00**	**4.50**

Football Bladders

First quality "Silvertown" red rubber, the lightest made—absolutely guaranteed.

Rugby

Rugby or Association

Sizes Nos. 4, 5, 6 . . . . . **$1.60 each**

Association

Morrill's Nose Mask

Morrill's Nose Mask is made of the finest rubber, and no wire or metal is used in its construction. It has become a necessity on every football team, and affords absolute protection to the nose and teeth

No. 1.—Nose Mask, Regulation size . . . . . **$2.50 each**
" 1B.—Nose Mask, Youth's size . . . . . **2.50 "**

Spalding's Rubber Mouthpiece

The Mouthpiece is made of best quality Para rubber. Gives perfect protection to the mouth and teeth.

No. 2.—Mouthpiece . . . . . **50c each**

Pocket Football Inflater

Made of highly polished brass, convenient in size and quick in action. The Cylinder is 5½ inches long and diameter ⅜ inch; extreme length, closed, 7¼ inches.

No. 3.—Brass Inflater. **Price** . . . . . **50c each**

See Terms page 3, and Discount sheet next back cover.

FOX IMPROVED UNIVERSAL WOOD TRIMMERS.

THE FAIRBANKS COMPANY

NO. 4A.

FIG. 9408, FRONT VIEW.
Makers' name visible on machine.

NO 4A.

FIG. 9408, REAR VIEW
The straight edge of the gauge bar is [illegible] the square cut. Gauges have graduated [illegible] height.

GENERAL DESCRIPTION, FIGS. 9408 TO 9411.

These Wood Trimmers are [illegible] for the purpose of cutting hard or soft wood absolutely true at any angle, both on the square and on any angle, mitre, bevel, etc., for all kinds of work to which they may be used in offices and workshops. For a bench use should be provided for every man, with as many of the larger sizes as are required for the heavier work.

The knives in Fox Trimmers work [illegible] edge of the gauges, making a [illegible] cut. The full height knives are so placed as to also give a perfect "draw cut" at every point in the travel. The [illegible] of the steel surfaces obtained from such a cut is well known. The gauges have a solid support against the upright post of the carriage frame, the full length, so that they cannot be sprung or broken.

Stop rods are furnished with the four largest sizes, two with each, as shown above for [illegible] segments, etc. Perfect glue joints can be made on these machines, except [illegible] segments. Two pairs of gauges for mitres, two of each. These are used as gauges in cutting duplicate pieces, segments, etc. Each rod has an adjustable clamp and thumb screw to hold it firmly.

NO 6F

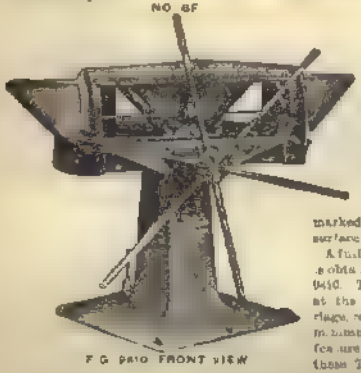


FIG 9410 FRONT VIEW

DESCRIPTION, FIGS. 9410 AND 9411.

The gauges on the E and F machines are practically the same except in size. Their accuracy and perfect adjustability with a wide range is exclusive with Fox Trimmers. The gauges may be positively secured on any angle by the eccentric clamping levers shown, and are instantly located at the prominent angles automatically by patent spring taper stop pins, which fit to accurately reamed holes in the bed. The prominent angles are plainly marked by lines on the bed surface and numbered.

A fine feed between gauges is obtained on Sty a F Fig 9410. The power is applied at the center of the carriage, reducing friction to a minimum. This [illegible] feature is the case with all these Trimmers—the only perfect construction. The power is transmitted from the hand lever to the carriage by a large spoked wheel on the lever shaft, a small sprocket at each side of the machine, and a special heavy chain of nickel steel, the ends of the chain being attached to the carriage with a provision for adjusting the tension. Gears and bearings are protected from dust and chips. The hand lever pivot is low down, giving an easy leverage.

Fig 9411 is a very popular size for medium large capacity. The bed is long and deep, making a splendid truing table. The feet have sufficient [illegible] to be used [illegible] erator and give a firm bearing on the floor, yet the machine may be moved readily.

NO 6E

FIG 9411 REAR VIEW

PRICES, FIGS. 9408 TO 9411.

No. *	3A	4A	5A	6	6H	8	8	8E	8F	8F
Length of cut, inches	4½	[illegible]	[illegible]	6	[illegible]	[illegible]	[illegible]	[illegible]	9	[illegible]
Size bed, inches	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Between gauges, inches	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Length of stroke, inches,	9	9	9½	13½	9½	9½	[illegible]	[illegible]	[illegible]	[illegible]
Price	$30 00	$40 50	$40 00	$55 00	$65 00	$62 00	[illegible]	[illegible]	[illegible]	$140 00
Extra knives, per set	4 00	6 00	7 00	9 00	6 00	7 00	[illegible]	[illegible]	[illegible]	6 00

* The number of machine is height of cut in inches.

NO 3. FOOT POWER MITER.

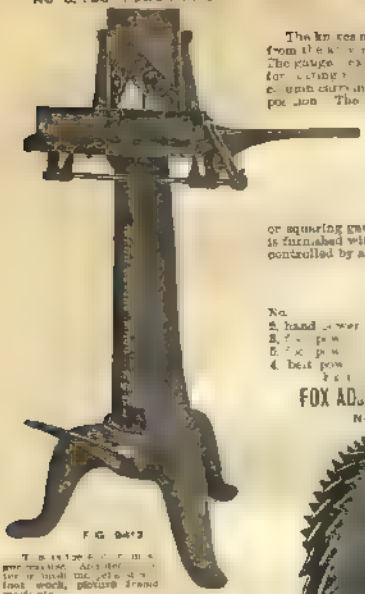


FIG 9412

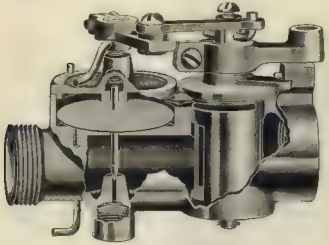
FOX MITERING MACHINES.

DESCRIPTION FIG. 9412

The knives make a straight and [illegible] cut. The miter gauge is adjustable to and from the knives as operated by the [illegible] shown at [illegible] bed. The gauge [illegible] for [illegible] No. 3 is provided with a [illegible] stop [illegible] for rule for [illegible] gauge the exact length desired. On the Nos. 4 and 5 Miters the [illegible] carrying the bed, etc., swivels on the tripod and may be revolved to any [illegible] position. The Nos. 4 and 5 may be [illegible] bed plates and squaring gauges. [illegible] bed plates. These are [illegible] adjustably in the bed of the [illegible] plates. [illegible] be made next to the knives. This [illegible] gauge may be [illegible] [illegible] [illegible]

1906 Garlius Carbureter

The cut herewith gives a partially interior view of the 1906 Garlius carburetor, which is now manufactured by the Winkley Company, P. O. Box 243, Detroit, Mich., formerly of Hartford, Conn. This carburetor has no float, and its special feature is the form of the main body, which is a straight air passage. In this air passage, standing at right angles to the travel of the incoming air, is a gasoline nozzle which is closed by a needle point connected to a disc located in a separate



1906 Garlius Carburetor.

chamber, the chamber being connected with the inner passage, so that the needle point is raised by the suction of the engine and closed automatically as soon as the suction ceases.

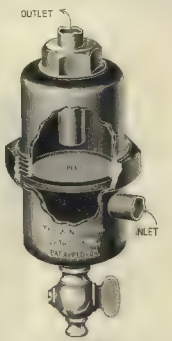
The amount of lift given to the needle point is governed by an adjusting screw above it and controls the amount of gasoline admitted for each charge; very fine adjustments may be obtained to suit the kind and peculiarities of the engine.

With the throttle type of carburetor a link connection is provided between the throttle stem and the screw that governs the needle point, so that as the throttle is opened or closed the amount of gasoline used is varied proportionately. As the needle point is raised gravity and syphonic action promptly deliver gasoline to the inrushing air and very fine spray is produced. The varying levels of gasoline in the supply tank do not affect the action of the delivery at the nozzle on account of the injector feature of its action, hence a float is not needed and the varied troubles due to change in levels of floats are avoided.

For 2-cycle engines, of the two port kinds, a neat and efficient check valve is provided, and will attach to either plain or throttle type of carburetor. For 2-cycle engines of three port kind the carburetor is particularly fitted; with its straight, unobstructed air passage the very best results are obtained.

1906 Eureka Separator

The Winkley Mfg. Co., P. O. Box 243, Detroit, Mich., which now manufactures the "Eureka" separator, has brought out a new model for the 1906 trade, a sectional view of which is shown herewith. The principle of its construction is quite simple, but the device is said to be very efficient. It consists principally of a shell or casing in two parts, held together by threads, a screen separating the interior of the two parts. The gasoline inlet is in the lower half of the casing below the screen, and the gasoline rises



1906 Eureka Separator.

through the screen, finally making its exit from the top of the upper half of the casing A tube extends from a point a little above the screen out through the top of the device. A drain cock is provided at the bottom of the shell to permit periodical removal of sediment and water. As many so-called ignition troubles are the result of the presence of water in the fuel, this separator is certainly a desirable accessory. It is made in three sizes, ranging in price from $1.75 to $3.50, these three sizes being sufficient for any requirement.

The Albright Manufacturing Company, Columbus, Ga., has recently been organized to take over the manufacture of the "Albright" spark plug, formerly made by the Camp Cycle Company, Columbus, Ga., and will be able to promptly fill all orders, having ample manufacturing facilities.

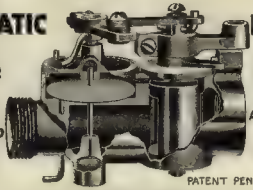
The A. & J. Mfg. Co., Chicago, Ill., are putting out a sample package of their "Brazziron" and flux to accomodate those who desire to try cast iron brazing on a small scale. The trial package contains "Brazziron" and flux, each put up in a neat box, both enclosed in a larger box, and mailed postpaid upon receipt of ten two cent stamps. The regular box of "Brazziron" and flux sells for 90 cents postpaid. A complete outfit, consisting of one box of "Brazziron," one box of flux and one package of spelter, sells for $1.00 postpaid.

Garllus Carburetor

SIMPLE

AUTOMATIC

THE ONLY CARBURETOR HAVING A STRAIGHT UNOBSTRUCTED PASSAGE



FLOATLESS

FOR AUTOMOBILES MOTOR BOATS AND ALL INTERNAL COMBUSTIBLE ENGINES

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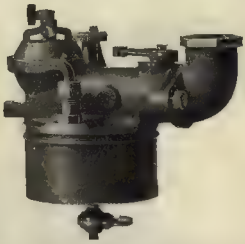
MANUFACTURED BY

THE WINKLEY COMPANY

Box 243 ✣ Detroit, Mich.

Breeze Automatic Carburetors.

1906 MODEL.



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GET PAMPHLET C.

BREEZE MOTOR MFG. CO., Newark, N. J.

NO 1. 20" WIDE 3½" DROP. 2" FORWARD BEND.

Hussey Handle Bars

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PERSONS ROYAL MOTOR SEAT

ADDS LUXURY to MOTOR-CYCLING

The very best Motorcycle Saddle in the world, bar none.

Insist on Getting it when you place your order

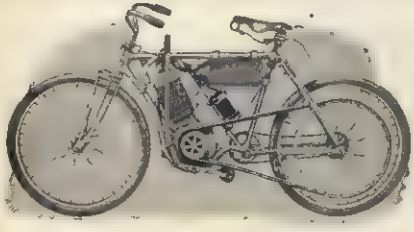
THE PERSONS MFG. CO., WORCESTER, MASS.

GENTLEMEN:—We write to compliment you on the new Royal Motor Seat, a number of which we are using on our motorcycles, and have been pronounced by all who have ridden them to be superior to anything else of the kind yet produced. They certainly double the pleasures of motorcycling as fitted with the old saddles, and we wish you every success with them. Yours truly,
Hammondsport, N. Y. (Signed) G. H. CURTISS MFG. CO. PER G. H. C.

PERSONS MFG. CO., WORCESTER, MASS.

GENTLEMEN:—Replying to your inquiry as to how I liked your saddle, I would inform you that the Royal Motor Seat was placed upon my Condo-quadricycle and takes up all the vibration. I have ridden it some distance and congratulate you on having such a beautiful seat. It certainly is much superior to any I have seen or tried, and seems perfection indeed. I weigh at present 194 pounds. The saddle has been a delight since first tried. Yours very truly,
Fort Hamilton, N. Y. (Signed) TIEMANN N. HORN, CAPT. U. S. A.

Persons Manufacturing Co., - Worcester, Mass.



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5-H. P. Green Egg, two cylinder $225.00
4-H. P. Blue Bird - $200.00
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We take second hand machines in exchange. Send for particulars. Our motorcycle supply catalogue is the most complete of its kind published, and should be in the hands of every motor-cycle dealer and rider. Sent upon request.

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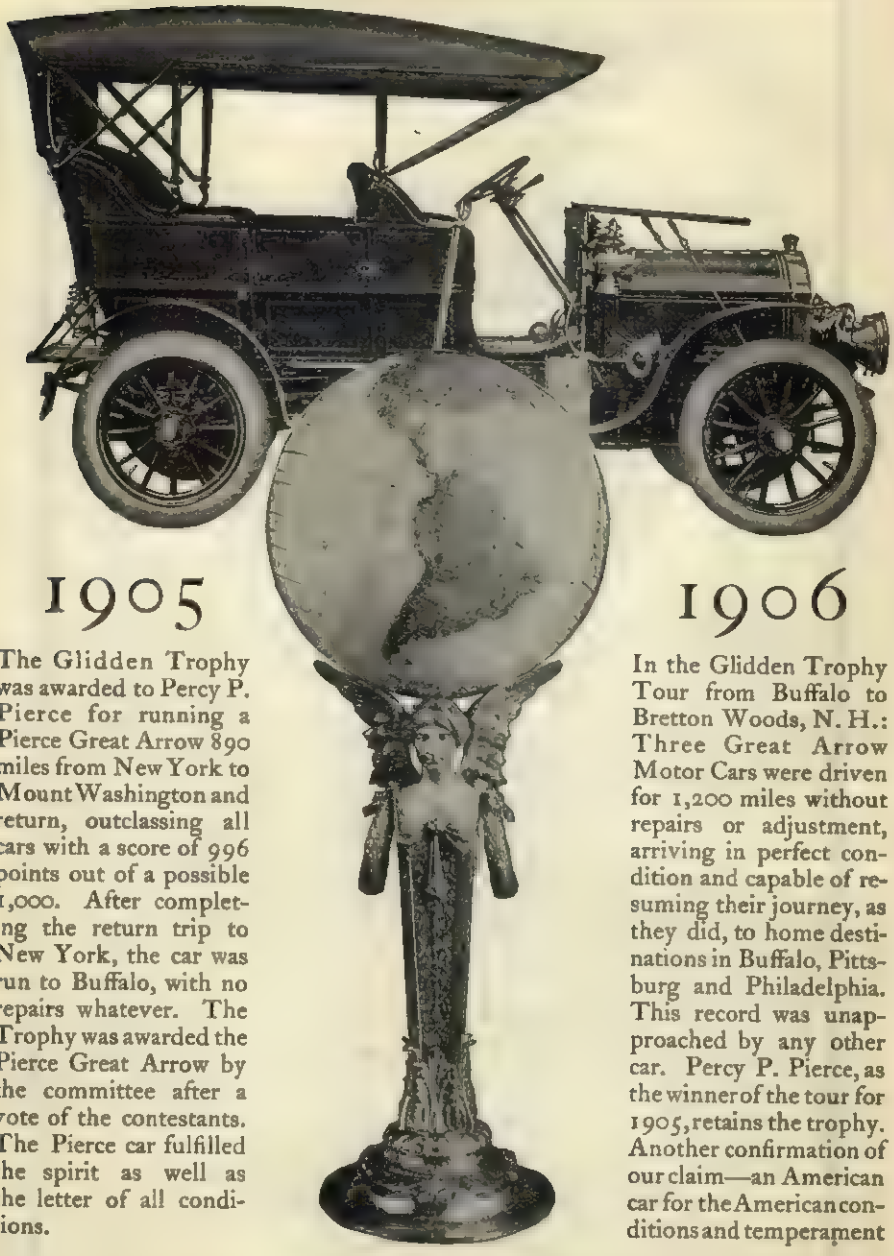


1905

The Glidden Trophy was awarded to Percy P. Pierce for running a Pierce Great Arrow 890 miles from New York to Mount Washington and return, outclassing all cars with a score of 996 points out of a possible 1,000. After completing the return trip to New York, the car was run to Buffalo, with no repairs whatever. The Trophy was awarded the Pierce Great Arrow by the committee after a vote of the contestants. The Pierce car fulfilled the spirit as well as the letter of all conditions.

1906

In the Glidden Trophy Tour from Buffalo to Bretton Woods, N. H.: Three Great Arrow Motor Cars were driven for 1,200 miles without repairs or adjustment, arriving in perfect condition and capable of resuming their journey, as they did, to home destinations in Buffalo, Pittsburg and Philadelphia. This record was unapproached by any other car. Percy P. Pierce, as the winner of the tour for 1905, retains the trophy. Another confirmation of our claim—an American car for the American conditions and temperament

THE GEORGE N. PIERCE COMPANY, BUFFALO, N. Y.

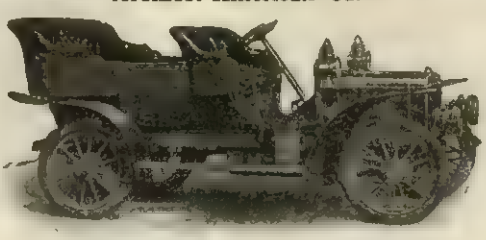
Members of Association of Licensed Automobile Manufacturers

Cleveland

The Car Without One Weak Spot

Makes Remarkable Showing in Recent Tours.

Comparison with competing cars in reliability, endurance and sustained speed makes the Cleveland stand out as the foremost American Car.



GLIDDEN TOUR RECORD.

Mr. Wallace H. Owen, of Philade.phia, drove a stock 30-35 horsepower Model F, Cleveland Car through the Glidden Tour with a perfect score except for a penalty of two points incurred on account of tire troubles in one control between Jackman and Waterville, Me. Had no points been remitted by the committee on account of difference in watches, and especially on account of the Saratoga-Elizabethtown run, Mr. Owen would have won the Glidden Trophy.

CHICAGO FIRST RELIABILITY TEST:—Over 100 miles of difficult roadway, including hills and deep mud from Chicago to Chicago via Elgin and Aurora, Ill. CLEVELAND RECORD: A stock 30-35 H. P. CLEVELAND ROADSTER entered in this contest driven by Mr. Dexter Fairbank) completed the course with an absolutely perfect score.

The showing made by the CLEVELAND ROADSTER and CLEVELAND MODEL F in these two tests—such as no private individual will ever put his car to except by deliberate intention—demonstrates conclusively the truth of our assertion that the CLEVELAND is a car "without one weak spot"

Specifications: 4 cylinder, 30-35 H. P. Imported Simms-Bosch magneto automatic make and break spark Direct drive, nickel steel, I beam front axle; 34x4 inch wheels, ball bearings; wheel base 104 inches; simplest control; 5 to 65 miles on high gear; absolutely noiseless. Body as shown.

Price, $3,500

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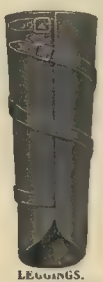

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We are ready to furnish you electrotypes.

Will be pleased to see our friends at the New York shows (space 173, Madison Square Garden. Space 66, 69th Regiment Armory).

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FINE AUSTRIAN TRADEMARKED PLATE.
Fine grade of china, handsomely decorated.

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ornaments, silvery effect, wide gold band, embossed edge. Assid. 2 in pkg. ... Each, 85c

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IMPORTED CHINA HANDLED CAKE PLATES.

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... and impressed purple rose clusters and scrolls. ¼ doz. pkg. Doz. $3.85

"MOTTO" CAKE PLATE.

77 ... and be at rest"

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... with green shading and alternating with ... ¼ doz. in pkg. Doz. $8.00

IMPORTED CHINA
SPOON TRAYS.

R4000 — [illegible] shape, [illegible] ments, flower center [illegible] ch, chin 1 doz in pkg. ... Doz. 98c

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MONEY MAKING 25c CHINA SPOON TRAY.

One of those items which return an extra good profit.

R4003 — 7¾x3¼, deep oval, embossed [illegible] gold shouldered ends, colored [illegible] cement china ¼ [illegible] Per dozen, **$1.75**

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R4004 — 7x3¾, white glaze surface, gold band [illegible] with embossed flowers in white and gold, 2 [illegible] in bottom outlined with [illegible] ¼ doz. in pkg. Doz. $2.05

R4006 — 8x4¼, heavily [illegible] ... and lion [illegible] ... [illegible] ... [illegible] ...

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STYLE No. 38

We present our latest and best type of oil lamps for use on High Grade Heavy Touring cars, 1907 Models.

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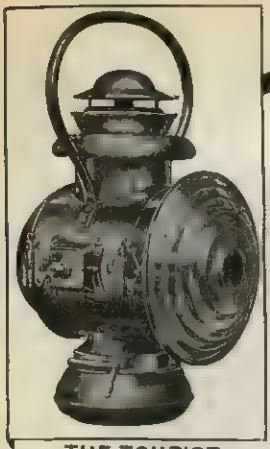

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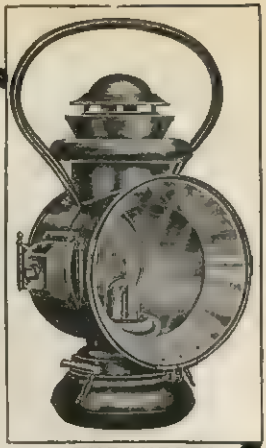

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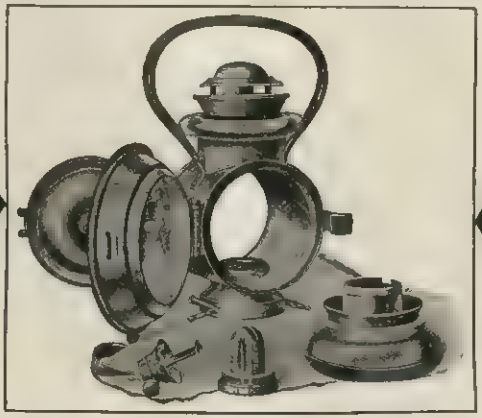

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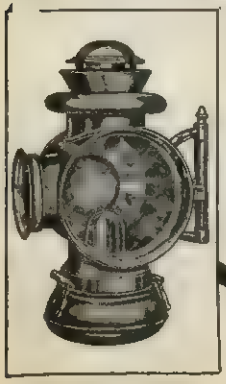

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We all know that cheap, poorly constructed lamps are a constant source of trouble, annoyance and expense; therefore it pays to buy good lamps. They are the cheapest in the end. Ham's Lamps are built of the best material by expert mechanics, are thoroughly reliable, are guaranteed not to blow or jar out and to give perfect satisfaction. Write for Booklet. Address "Dept. D."

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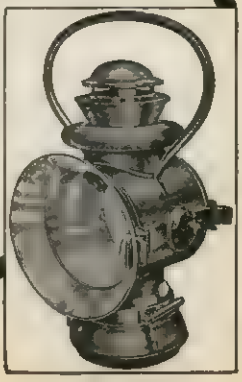

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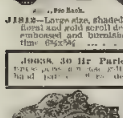
CHINA CASE CLOCKS.

J1810—3 colors, blue and crean Wedgwood design cases, 30 hour Ansonia movements, 2 in. dial, escapement hand, gilt ends, 5½ inches high. Each **75c**

J1812, Each. J1813, 81c Each.

J1812—Large size, shaded light green, colored floral and gold scroll decoration, 3¼ in. dial, embossed and burnished gilt ends, 30 hr. time, 6½x9½ inches. Each, **98c**

J9038, 30 Hr Parlor Alarm—Green onyx finish case, 3½ in. dial, patent escapement, 30 hour movement, 6½ inches high. Each **$1.65**

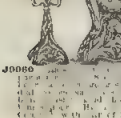


J9007—Rosewood finished porcelain, gold scroll and hand colored floral decorations, 4 in. dial, 30 hour movement, 8½ inches high. Each **$2.75**

J1827—10x14 cobalt blue with wreath and floral decorations, 4 in. dial, 30 hour movement, 12½ inches high. Each **$3.50**

J1828—10x14 white enamel, gold dial, gilt corners, gilt bezel, 30 hour movement, 12½ inches high. Each **$3.50**

J1829—10x14 white enamel, gold dial, gilt corners, gilt bezel, 30 hour movement, 12½ inches high. Each **$3.50**



J1830—10x14 white enamel, gold dial, gilt corners, gilt bezel, 30 hour movement, 12½ inches high. Each **$3.50**

J1831—10x14 white enamel, gold dial, gilt corners, gilt bezel, 30 hour movement, 12½ inches high. Each **$3.50**

J1832—10x14 white enamel, gold dial, gilt corners, gilt bezel, 30 hour movement, 12½ inches high. Each **$3.50**

J1833—10x14 white enamel, gold dial, gilt corners, gilt bezel, 30 hour movement, 12½ inches high. Each **$3.50**

Cased, 25 lbs. ..... Each. **$4.40**

Clock and Candelabra Set.

J9080—Rosewood finished [illegible] with inlaid decorations, [illegible] with gilt ornaments, [illegible] to match, 3½ in. dial, [illegible] 11¾ in., width 15½. Each set in case, about 18 lbs. ..... Set **$13.25**

FANCY 3 PIECE 8 DAY CLOCK SET.

J9415—Visible escapement, Arabic engine, gold plated case with inlaid decorations on pendulum, side ornaments to match, bold face clear figures, 4 in. dial, 8 day movement, in all respects a set of taste. Set **$25.00**

ART NOUVEAU DESIGN CLOCK.

J9030—Green bronze finish embossed gilt design with large bronze, art nouveau figure, bronze tinted flowing drapery and vines, 30 hr. gong striking time, 3½ in. dial, 12¾ in. high. Each **$3.00**

GUARANTEED MINIATURE WALL CUCKOO CLOCKS.

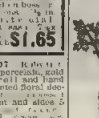
J9018, 19c Each. J9020, 27c Each.

Strictly first quality. Every clock guaranteed and will return to us for credit if not satisfactory.

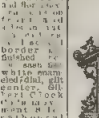
J9018—Imitation walnut finish paper mache front with 3 inch dial, strong, fancy scroll, glass dial, white hands and brass pendulum movement, highly polished, complete with brass winding chain and score pendulum ..... Each, **39c**

J9020—Walnut finish wood, black and gold fruit carving, white bone hands and figures, 4½ in. dial, copper finish iron weights, brass chain, guaranteed brass movement. Cased **49c**. Can be taken out and repaired without destroying case. Each **57c**

CUCKOO CLOCKS.



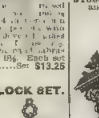
J9017—14½ x 8½ in. Walnut finish, with fine hand-carved leaves and grapes, new style movement, 8 in. dial, 8 day, strikes hour and half hour on coil of wire. Cased 10 lbs. Each **$2.75**



J1884, $4.35 Each. J1885, $6.40 Each.

J1884—21x14, dial 8½, ½ hour strike and call, walnut or oak finish, inlaid ash, ebony or mahogany ornaments. Cased, 18 lbs. Each, **$4.35**

J1885—19x14 carved walnut or oak with bevel mat cut bevel white bone hands and finish. Cased, 18 lbs. Each, **$6.40**



J1694—Quaint and quick hand carved design, with scroll and leaf beige, inlaid ash and oak panels, hand carved leaf mounted top, 7½ in. dial, white bone carved hands and figures, 8 copper finished iron weights, brass chain. Quality watches the quarter hour and calls the full hour. Cased 15 lbs. Each **$10.50**

MANTEL ALARM CLOCK.

J1719—Embossed floral scroll design, nickel dial, gilt rococo dash, 5 in. dial, 30 hour movement, highly guaranteed, 7 in. high. Each **$1.35**

WHEN a letter comes from a big house asking something special in goods and prices do you not look back over it? We ask a like courtesy—

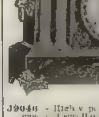
HIGH GRADE 8 DAY PARLOR CLOCKS.

Each guaranteed and with hour and ½ hour cathedral gong strikes.

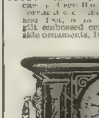
J9488—Best black enameled wood, gilt feet and side ornaments, marbleized columns with gilt embossed capitals, best white dial with fancy gilt center. Cased 19 lbs. Each **$2.30**

J1714—[illegible] highly polished [illegible] gilt decorations, [illegible] best [illegible] white dial with [illegible] Cased [illegible] Each **$2.50**

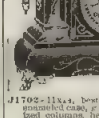
J9046—High grade black enamel case, [illegible] gilt embossed corner, embossed lion head side ornaments, [illegible]. Cased, 19 lbs. Each, **$2.88**



J1702—11x14, best Arsenian movement, black enameled case, [illegible] best [illegible] gilt ornaments, heavy gilt side ornaments, [illegible] Cased [illegible] Each **$3.00**



J1715—15½x15½, highly polished black enamel wood case, [illegible] gilt embossed [illegible] handles and ornaments, gilt rococo sash, 5 in. dial with gilt center, [illegible] movement. Cased, 15 lbs. ..... Each **$3.10**

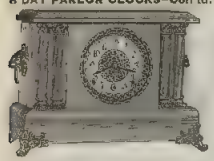


J9009—Six back corrugated columns with gilt openwork napkins, giving [illegible] pipe organ effect, gilt feet and trimmings, 8 in. dial, embossed gilt center and sash bezel, black Arabian [illegible] 10 lbs. ..... Each **$3.25**

J1716—16x11 four embossed rod columns with capitols, gilt scroll ornaments, polished black enamel wood case, [illegible] and white marbleized moldings, [illegible] 8 day, [illegible] and 2 dial head style [illegible] gilt rococo gilt sash, 8 in. dial, [illegible] Ingraham movt. Cased 16 lbs. [illegible] **$3.35**

J9004—Black enamel finish gray marbleized mouldings, heavy embossed gilt [illegible] [illegible] [illegible]

8 DAY PARLOR CLOCKS—Con'td.



J9047 Washable white enamel finish, 4 carcanted gilt columns, embossed gilt capitals and feet, fine hand-able ornaments, 9-in. dial, gilt embossed center, gilt rococo sash. Box 10¾. Cased, 15 lbs. Each $4.00

J12005 15-18 Steel Anchor clock. Dull dial, gilt feet, black rosewood enameled front, brass trimmings and dark marble finish side ornaments, gong or bell metal bell on gilt arch Cased, 25 lbs Each $4.40

"SETH THOMAS" MANTEL CLOCKS.

Carefully and neatly finished, every one a splendid time keeper, half hour repeating gong or bell.

J9400, "Apache"—Highly polished adamantine finish, gilt scroll decoration, silvered bezel, adding machine style, eight-day movement, embossed gilt caps, side and feet. Long-pendulum visible escapement. Box 10¾. Cased, 15 lbs Each $3.95

J1738, "Stanhope" Mantel Clock—Very elegant and perfect. Pillar design, fluted columns, handsome gilt capitals, marble base, ornaments and feet, silvered dial, fine hands, eight-day movement, strikes the hour on a fine bell. Each case 7 lbs Each $4.25

8 DAY CHIME HALL CLOCKS.

J9413—Oak case fine finish, 14 in. high, 6 in. wide, 12 in. deep, 12 in. dial, silvered dial, Arabic figures. Heavy plate glass doors, gilt ornaments, strikes the hour on 5 rods, on chime bells on 5 separate cup gongs, each having a different tone and harmony. Has 3 winding keys, 1 for each movement. Box 20 lbs. Each $25.00

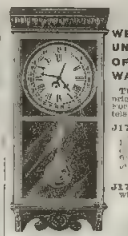
9414—Same as above but in mahogany finish with gold-plated ornaments on panel in base and around dial on top Each $29.00

WOOD WALL CLOCKS.

J1758—8-day, for kitchen or office. Plain case, 12 inches high, 10 inches wide, 16 lbs. Each $2.32

J1766, Hartford Time Regulator—Oak case, 32 inches high, 12 inches wide, 25 lbs. Each $2.70

J1767, "Calendar"—Same as above with calendar, tells day of month. Wt. 34 lbs. Each $2.90

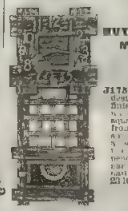


WESTERN UNION STYLE OFFICE OR WALL CLOCKS.

The best clocks for the price in the market. For schools, offices, hotels and public places.

J1756—8-day wall regulator, 24 inches high, 12 inches wide, oak case, 2 doors, glass and gilt. Cased, 25 lbs. Each $2.67

J1757—As J1756 but without calendar. Each $2.48



BUTON MISSION WALL CLOCK.

J1759—Dutch mission design, weathered oak finish, 12 in. dial, silvered, 8-day, strike, square lattice work front backed with glass, swinging door, 8 inches square at bottom, brass bezel, glass front, brass pendulum, gong strikes hour on bell. Cased, 11 lbs. Each $3.00

SETH THOMAS WOOD WALL CLOCKS.

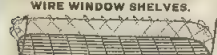
J9044—Drop octagon dial, 8-day, strike, rosewood finish case, 18 lbs. Each, $4.00

J9045—Fancy drop dial, 8-day, strike, rosewood finish case, 24x38. Cased, 18 lbs. Each, $4.75

"MANTEL" WOOD CLOCK ASSORTMENTS.

J1738—Extra value. Decorated assortment. Highly finished, embossed on side and base ornaments, gold decorations on glass, silvered dome dial, 8-day, 1 jewel movement, 8 day, 1 jewel movement, 8 day, 1 jewel movement, 8

WIRE WINDOW SHELVES.



H29 Readily put up to windows with two screw eyes made of ... wire mesh painted. 23x8 ... Each, $0 43 | 30x8 ... Each $0 52
Slats ... " 38 |

ADJUSTABLE TREE GUARD.

H124—H. 5 ft. 6 in., diam. 9 in., flat strap steel with twisted uprights riveted together by 4 bands of steel. Japanned finish, made in halves to be bolted together at ... and set on each side. 3 to be ... Wt. 8 lbs ... Each. $1.10

HANGING WIRE FLOWER POT BASKETS.

Spec... hanging ... of ... wire ... size. Made in three sizes all ... painted green. Wrapped 1 doz. in ...

H8: 8 in.....Doz. $0 96
H10: 10 in. " 1 35
H12: 12 " " 1 72

STEEL DOOR MATS.

Perfect folding ... Made of ... heavy ... steel ... Each, 68c
H181 ... 30c

BLACK WROUGHT IRON SPECIALTIES.

High class goods, wrought iron, dead jet black finish, also oil ... Splendid sellers.

Umbrella Stands.

H80, 47c Each

H79, $1.25 Each.

H49, Round. Diam. 9 in. ht. 35 in. Each wrapped. Each 87c

H75, Round ... Electric brass plated ... Ht. 30 ... diam. 9 ... Each. $1 20

H74 Square. More elaborate than the round stand. heavier in appearance. holds a few more umbrellas, being 9 in square. finished ... Ht. 29 in. ..... Each. $1 65

JARDINIERE STANDS.

H98-18: With heavy brass pan, polished and lacquered, 18 in. high. Table with accommodate jardiniere with ... ring in the ... shape bottom.

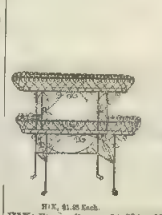
Each **95c**

H98-28: As ... in ... Each. **$1.50**

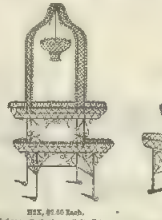
ALL STEEL FLOWER POT STANDS.

Shipped from factory in northern Illinois.

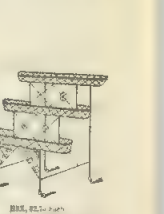
Steel frames, strongest made but light weight, cost... shipping. On casters. Painted green, gold bronze trimming.



H1X, $1.35 Each.

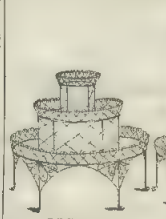


H2X, $2.50 Each.



H3X, $2... Each.

H1X: For small room. ht. 29 in., 18 deep, 2 shelves 3 ft. 3 in.. ..... Each $1.85
H2X: Square arch stand. ht. 3 ft. 9 in., 18 deep, 2 shelves. 3 ft. 3 in. ..... Each $2.50
H3X: Square stand. ht. 38 in., 20 deep, 3 shelves 39 in. long ... . Each. $2.75



H4X, $3.60 Each.

H5X, $4.75 Each.

H6X, $4.75 Each

H4X: Half round stand, ht. 3 ft. 3, width 1 ft. 11 in. 3 shelves ..... Each $2.60
H5X: Half round arch stand, ht. 6 ft. 4, width 4 ft., 31 in. deep, 3 shelves..... Each, $3.75
H6X Ht. 3 ft. ... 10 ... 3 ft. 10 long ... shelves ..... Each $4.75

"Hendryx" Line of BIRD CAGES

Better values than ever before. The ... Hendryx Cages ... We ... finish ... Tools, ... creating ... ... We are ready to demonstrate our ability to save you money on bird cages. Will you not meet us half way and favor us with a trial order?

All cages have ... perches and swings, and all ... sizes have ... tipped cedar perches. Sold by case only.

Suggestion to dealers who do not sell bird cages: We are ... the curtain ... would pay you to add ... To ... ... the ... ...

DOMESTIC STUFFED ANIMALS ON WHEELS.

F2854 Pict. Size Dec.

Stuffed Dogs - Fur ears, black button eyes, ribbon collar with bell, wire frame, wooden wheels.

F2855—Black curly fur. 1 doz. in box. Doz. 42c

F2857 ... Doz. 77c

F2858 Mule in Horse ... Doz. 85c

PLUSH MONKEY.

F3433 – Soft plush brown ... tinsel collar with ... $2.05

BROWN PLUSH BEARS.

... Each ... 75c

F3545 ... $1.00

F3546—... $2.10

COMICAL ANIMAL CUSHIONS.

F3523—5 styles—elephant, monkey and cat, bulldog and ... $9.00

HAND CARVED WOOD TOYS.

Made of whitewood, genuine hand carving.

F2939, 35c Doz. F2940, 50c Doz.

F2941 Man and bear see-sawing, jumping strike man under, 16x3. 4 doz. pkg. Doz. 27c

F2949—Windmill whizzer. ... drawn man ... runs on ... whistle tone, 5½ in. ... doz. in pkg. Doz. 38c

IMPORTED TOY WHIPS.

A. ... whips.

F3209—Well wound corded lash 24 in. with ... lash. 1 doz. in ... Doz. 28c

F3301 ... bound ... 28 in. 1 doz. in pkg. ... Doz. 39c

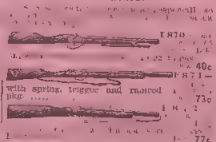
F3601—Imit. leather, velvet and nickel mounted ... Doz. 76c

Better Grade Imported TOY WHIPS.

F3303 – Rattan whip with snap, leatherette ... Doz. 39c

F3305—Al. leather with wide band, wax ... and bound. About 28 in. Doz. 80c

TOY GUNS.



F870 ... 40c

F871 ... with spring, trigger and ... pkg. ... 73c

... 77c

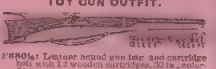
F873 ... Doz. 95c

F874 ... Doz. $1.65

... Doz. $1.96

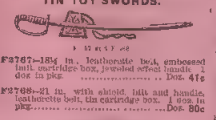
F876—Rubber ball pop gun, 21 ... finish in checkered ... and one cork for firing ... bobbing ball, ½ doz. in pkg. ... $4.10

TOY GUN OUTFIT.



F4804—Leather belted gun ... and cartridge belt with 12 wooden cartridges, 30 in. ... 46 inches patent spring ... good for ... Doz. $8.00

TIN TOY SWORDS.



F3767—18¼ in., leatherette belt, embossed ... cartridge box, jeweled effect handle, ... doz. in pkg. ... Doz. 47c

F3768—21 in., with shield, bib and handle, ... belt, tin cartridge box. 1 doz. in pkg. ... Doz. 80c

F3769 ... swords, ... 20 ... ½ ... ... shield, ... Doz. $1.95

BOYS' KITES.

Pict. Size Dec.

F4901—"High Flyer" ... wire frame, ... covered in ... Doz. 43c

F4902—"Ring Tail" Box Kite—14x14 ... 20 in. tail. ... all colors. When ... grouped in twos, threes or more, ... high flying power. Each kite in ... with instructions ... to build ... by catalogue.

IMPORTED TOY WHIPS.

F3206—As F3205, about 10¼ in. 1 doz. in box. Doz. 66c

F3301 Novelty Champagne Pop Pistol. Bottle shape, ... finish labeled, cork ... through to base. Each, 5in. ... Doz. 80c

FRENCH POP PISTOLS.

F3305, ... fancy ... finish ... barrel, cork ... attached to ... string. 1 doz. in pkg. Doz. 45c

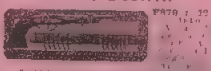
F3826—As F3305, about 10¼ in. 1 doz. in box. Doz. 66c

DOUBLE ACTION TOY PISTOL.

F3828—Polished turned wood ... nickel ... Length 10¼ in. 1 doz. ... Per dozen 96c

F3842, Extra Loud—15½ in., highly polished colored stripes. ¼ doz. in box. Doz. $2.00

TOY PISTOL OUTFIT.



F878 ... Doz. $1.95

WATER PISTOLS.

Pict. Size Dec. Pict. Size Dec.

F58—Length 6 in. Pewter ... finish, white ... pressed pistol, shoots ... Doz. in box. Doz. 72c

F53—As F58, ... in. Each ... $1.75

TOY REINS

F3682—White enameled tin breast strap red ... and blue webbing, two ... good length. 2 doz. in box. ... Doz. 38c

F683—Red and white ... 6 in breast strap, four ... bells red, white and blue ... Doz. 77c

F686—An extremely good ... white enameled ... in breast strap, six ... bells, red, white ... and four striped ... 1 doz. in box. ... Doz. 89c

F685 ... Doz. $1.90

POLICEMEN'S, FIREMEN'S AND SOLDIERS' OUTFITS.

F3907—Policeman's helmet, breast plate, nickel buttons and shield, belt, club and handcuffs. Set 36c

F3908—Fireman's helmet with front piece, ... plate, leather ... Set 76c

F3909 ... belt and ... strap, ... breast straps ... Set 98c

F912—Similar to F3909, but finer finish, larger ... and more elaborate. Each set in box.

TRANSPARENT SLATES.

F3407 ... wood frame, 6x ... Each ... 1 ... Doz. 37c

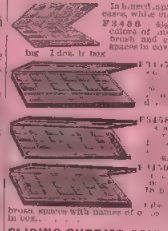
F3401 ... F3403, 7¾ x 9¾ ... about 12 subjects ... to sheet. 1 doz. in ... Doz. 77c

F3405 Indian ... trousers figure, ... wood, ... 18x27¾. Each ... cut to ... 6 sheets ... Doz. 83c

F3406 ... Each ... Doz. 89c

F3467—As F3406, 10½x8¾, 6 sheets ... one of ... Each ... $1.95

MOIST COLOR PAINT BOXES.



In ... nickel ... metal cases, white ... lined. F3426 ... 6x4 x 2¾, 12 colors of ... and ... brush and ... Each ... 1 doz. in box ... Doz. 35c

F3427 ... Doz. 78c

F3458 ... Doz. 81c

F3459 ... brush, spaces with ... Each ... in box. ... $1.79

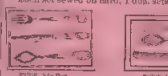
SLIDING CHROMO COVER PAINT BOXES.

F3455 ... 12 round ... 6 ... 1 transparent ... 1 ... brush. Doz. 42c

F3453 ... brush and 10 ... In crown paints. 1 doz. in pkg. Doz. 78c

CHILDREN'S IMPORTED MEMENTOES.

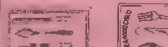
Each set sewed on card, 1 doz. sets in box.



F3304, 36c Doz. F3305, 36c Doz.

F3308—Nickeled finish, white metal, fancy ... breast handles, about 4½ in. Doz. 32c

F3307 6 piece, nickeled knife and fork with ... round white bone handles, nickeled ... Doz. 36c



F3209—Nickeled knife and fork, nickel, color ... fancy china handles, nickeled ... Doz. sets 80c

F3210 ... Each set ... Doz. 89c

Children's Full Size Three Piece Set.

F4713—Polished ... knife, fork and spoon, nickel ... china hand ... In box. Doz. sets $2.05

NUREMBURG MAGIC BOX.

F832—Nickel ... box ... ... tricks ... Complete with ... and figures. ... In ... pkg. Doz. $2.00

ASSORTMENTS OF GERMAN TOYS.

12 styles assrd. in box of 1 doz.

F3880 ... horses, ... Per ... Per dozen 37c

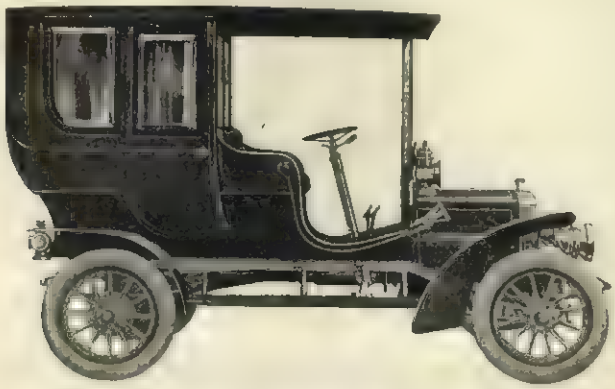
F3881 ... Per dozen 79c

The ... of ... has ... business ... We ... ... goods EXCEPT by catalogue.

Limousines FOR FALL AND WINTER

The regular touring body of the Silent Northern is interchangeable with our Limousine body and the change can be easily made because there are no levers or attachments of any kind on the body. Suggest the change to your customers now and get orders in early to insure prompt delivery.

Special—The successful experience of three years demonstrates that we have reached mighty close to perfection in the construction of our Model "C"—Silent Northern—hence there will be no changes in the construction of this model for 1907.



The Silent Northern Limousine—Equipped with same chassis as our famous Model "C," including complete gas and oil lamp equipment **$2,800 f. o. b. Detroit.**

We shall exhibit only at the Seventh National Automobile Show at Madison Square Garden, January 12-19, 1907.

Northern **Model "K".** 60 h. p. Four Cylinder, air with self-adjusting **Air-clutch,** and **Air-brakes,**—price **$3,000**—is the only car in the world with a **self-adjusting clutch.** Speed, 6 to 60 miles an hour and more. Write for detailed information.

DEALERS—We are always on the alert for enterprising dealers, and if you are "enterprising" you are on the alert for a "good proposition" for 1907. We have it.

WRITE EARLY.

Member Association of Licensed Automobile Manufacturers.

NORTHERN

MOTOR CAR CO.

DETROIT, U. S. A.

HOLSMAN

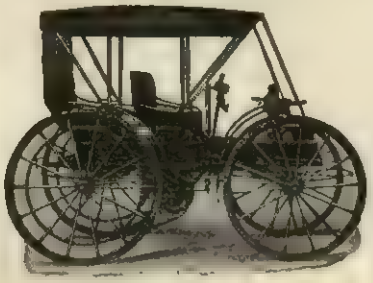
Model No. 3

Perfect Score in Chicago Reliability Run

by Model No. 3 in Runabout Class

FIRST PLACE

by Model No. 6, Light Touring Class



Model No. 6

THE HOLSMAN AUTOMOBILE CO.

Monadnock Block, CHICAGO

Ask for Catalogue C

HOLTZER MAGNETO WATCHMAN'S CLOCKS.

DESCRIPTION, FIG. 4293.

The H ltzer Ma neto Clock requires no batteries, but is operated by magnetic generators registration cannot be made by s ort c rcuiting the w res.

T re re a p rcelain tile, being a puncture in the dial wh c annot be effaced.

S ast sting gr ve ly made.

A ll brass parts are p ated or l acquered. The armatures and r l parts copper w re to pr v nt r ng the magnets wound with a c ar c ver s p

Fig. 4 s s plain r n h ma n ished c r ed l ak case. The st is op d with k y and where a s ar r ecp n b dec ed wi the l s wards of f r s for p s wal ma a rp ce.

PRICES, FIG. 4293.

	Each.
4 Stations, Style D	$60 00
6 "	70 00
8 "	80 00
10 "	90 00
12 "	100 00
15 "	115 00
20 "	140 00
25 "	165 00

Add $5 00 for each add tional st tion.
A ext a y k s f r ished w th every c ock.

FIG. 4293, STYLE D.

FIG. 4294, STYLE C.

DESCRIPTION FIG. 4294.

The Style C Detector shown in Fig. 4294 has n addition to the dial movement, an eight day office clock. The case is nicely finished in quartered oak.

Style A (not illustrated) is a more elaborate pattern than the Style C. It is also nicely finished in quartered oak and has an eight day regulator movement with 8" mercurial pendulum.

PRICES, FIG. 4294.

	Style C Each.	Style A, Each.
4 Stations.	$75 00	$ 75 00
6 "	85 00	85 00
8 "	95 00	195 00
10 "	95 00	205 00
12 "	115 00	215 00
15 "	130 00	230 00
20 "	155 00	255 00
25 "	180 00	280 00

FIG 4295

DESCRIPTION, FIG. 4295

The above cut shows the interior mechanism of the Holtzer Magneto Clock.

The m ve ments as well as the magnet r coil working parts are mounted upon a sing le heavy cast iron plate which keeps them in the most accurate adjustment and makes the whole mechanism a rigid structure.

HAHN IMPROVED WATCHMAN'S CLOCKS OR TIME DETECTORS.

WITH SAFETY LOCK ATTACHMENT

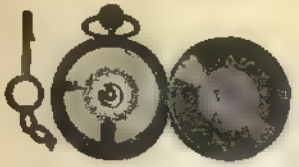


FIG. 4298.

This instrument is supplied with 6, 8, 12, 18 or 24 different keys for 6, 8, 13, 18 or 24 stations.

Each instrument in leather case and with a year's supply of dials.

PRICES, FIG. 4298

6	Different keys for 6 stations, complete		$55 00
8	" 8 " "		57 00
13	" 13 " "		60 00
18	" 18 " "		70 50
24	" 24 " "		83 00

IMPERIAL PORTABLE WATCHMAN'S CLOCKS OR TIME DETECTORS.

WITH SAFETY LOCK ATTACHMENT

The Imperial complies with the requirements of the National Board of Fire Underwriters.

CLOCK

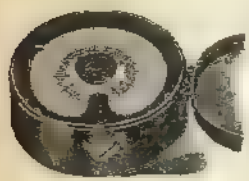


FIG. 4297.

DESCRIPTION, FIG. 4297

View open case, showing watchman's clock with watchman's record disk of six stations on the station clock dial, the hands of the clock shown at the stations for which the register will allow the watchman to proceed, and the key hole for entrance. Front door open.

STATION BOX AND KEY

FIG. 4299

DESCRIPTION FIG. 4298

The seals cover the screws that fasten the box to the wall. The keys are made of Delta metal and will not corrode or rust.

PRICES FIGS. 4297 AND 4298

6 key watch	$48 50
13 key watch	53 50

Each watch is shipped complete with keys, leather pouch for strap, station boxes, seals, and one lot of paper dials for one year.

MARINE AND LOCOMOTIVE CLOCKS.

EIGHT DAY.

FIG. 4299.

DESCRIPTION, FIG. 4299.

These clocks are made with a ring hooked to the case fitted with screw and key, and finished on the highest grade movement, having chronometer escapement, ruby jewels in the escapement and pivot holes. They are designed especially for steamboats, plants where the engines are locomotives, yachts etc. and in fact all places where pendulum clocks cannot be used and yet accurate time is required.

PRICES, FIG. 4299.

YANKEE CLOCKS.

	Each.		Each.
30 inch, brass case	$25.00	34½ inch, brass case	$30 00
30½ inch, N. P. case	24.00	34½ inch, N. P. case	28.00

VARIOUS MOVEMENTS.

Size, Dial, Inches.	Movement.	Brass case. Each.	N. P. case. Each.	Size, Dial, Inches.	Movement.	Brass case. Each.	N. P. Case. Each.
12	Yankee	$ 15 00	$ 17 00	8	Seth Thomas	$50.00	$54.00
10	"	13 00	15 00	10	"	55.00	60.00
8½	"	11 00	12 50	10½	"	59.00	67.50
10½	"	14 00	16 00	12½	"	65.00	67.00
12	Seth Thomas	39 00	50 00	8	"	60.00	64.50
10	"	35 00	40 00	10½	"	68.00	69.25
8½	"	32 00	37 50	5	"	55.00	58.00
10½	"	45 00	47 00				

REVOLUTION COUNTERS.

DESCRIPTION FIG. 4300

The construction of this counter includes some new features, making it a decided improvement over the various counters for steam wheels and other engine recording services. Its keys are positive and work with little friction, and is operated by a pin in the end of the connecting rod. The pin engages a ratchet mounted on this face which engages the pawl actuated by the eccentric on the pin of the counter shaft. The pawl is operated by the eccentric on the pin of the counter shaft. The pawl is operated by the eccentric on the pin of the counter shaft. The pawl is operated by the eccentric on the pin of the counter shaft.

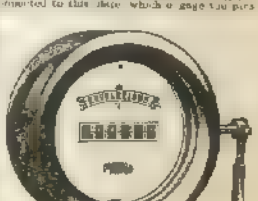


FIG 4300.

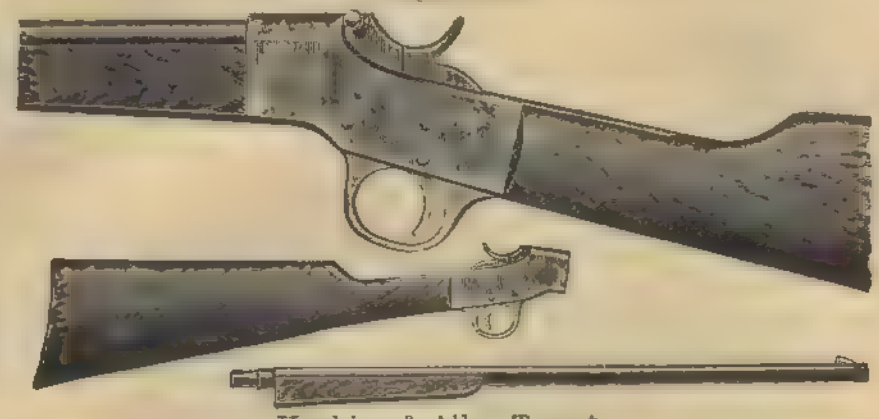
PRICES FIG. 4300

Size, Dial, Inches.	No. Wheels.	Brass Case, Each	N. P., O. D. or Oct. Ring, Each
2	3	$11 00	$13 50
6	3	25 00	28 50
8½	3	80 00	90 00
12	3	130 00	154 00
10	3	85 00	98 00
8½	3	70.00	75 00
8½	3	60.00	65 00
6	3 W	50.00	55.00

THE FAIRBANKS COMPANY

RIFLES.

In Ordering Rifles on this page, the Marginal Number to the left will be sufficient to designate them.



Hopkins & Allen Target.

A pattern of new design; it has a Solid Breech Block Action, Case Hardened Frame, Oiled Walnut Machine Turned Stock, with Hard Rubber Butt Plate, Knife Blade Front Sight, Flat Top Sporting Rear Sight. Take Down Pattern and guaranteed to shoot as well as they look. It is chambered for a 22 Short or Long Cartridge.

EACH

No. 722—22 Caliber, 18 inch Barrel; Weight, 3½ lbs..... $3.50

Packed 20 in a Case, Weight 88 lbs.

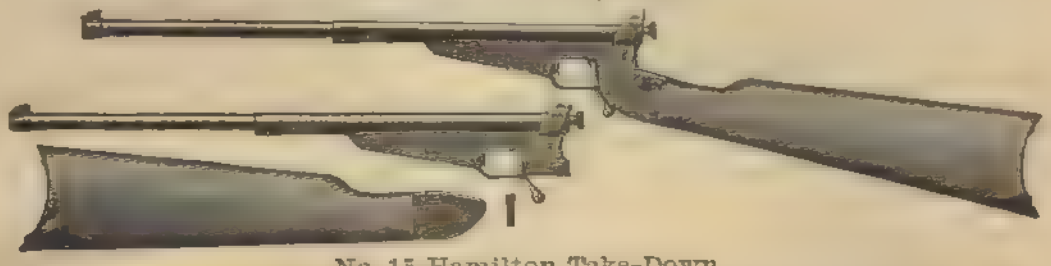
"Rough Rider"—22 Caliber, Single Shot, Take-Down.

The "Rough Rider" is the Latest 22 Caliber Rifle on the market, shooting the 22 Short and Long Rim Fire Cartridges, is of the Best Workmanship and very Strong. It has a Round Barrel, accurately rifled and sights, operated by simply giving the Lever a quarter turn forward and to the rear, this opens the breech and ejects the empty Shell, the closing motion automatically cocks the Arm, leaving it ready to fire by simply pulling the trigger.

EACH

The "Rough Rider"—22 Caliber, Round Barrel, Blued Finish, Weight, 3 lbs..... .....$4.50

Packed 50 in a Case, Weight 205 lbs.



No. 15 Hamilton Take-Down.

Constructed of Steel throughout, having a fine blue-black Gun finish, with "Take-Down" Walnut Stock. Full length, 28 inches, distance between sights 16 inches, fitted with Rear Peep Sight, adjusts to both ways. Lever Action, with Automatic Shell Extractor.

EACH

No. 15—22 Caliber, Short or Long Rim Fire..... $2.00

Packed 10 in a Case, Measuring 5 x 8 x 18½ inch and Weighing about 25 lbs

EACH

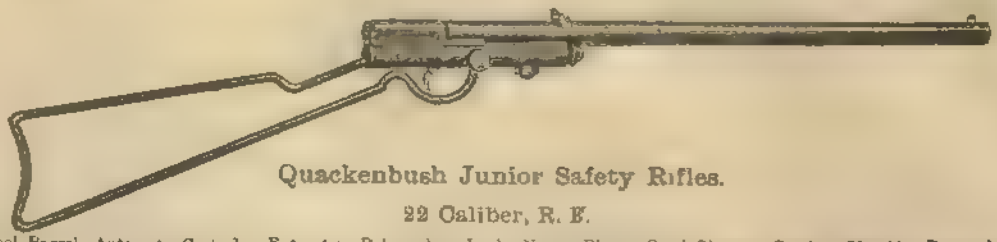
No. 19—Same as No. 15, except heavier Stock and better made, full length, 33 inches; distance between sights, 20 inches..... $2.50

Packed 10 in a Case, Measuring 5½ x 8½ x 20½ inch and Weighing about 27 lbs.

SIMMONS HARDWARE COMPANY

TARGET RIFLES.

In Ordering Rifles on this Page, the Marginal Numbers to the Left will be sufficient to designate them.



Quackenbush Junior Safety Rifles.

22 Caliber, R. F.

Steel Barrel, Automatic Cartridge Extractor, Rebounding Lock, Nickel Plated Steel Skeleton Stock or Shoulder Rest, which can be instantly detached, making the arm handy to carry in a trunk or package, whole length, 33 inches.

	EACH.
No. 34—22 Caliber, **Nickel Plated,** 18 in. Barrel; Weight, 4 lbs.,	$5.25

Shoots BB Caps, 22 Short, 22 Long and 22 Long Rifle R. F. Cartridges.

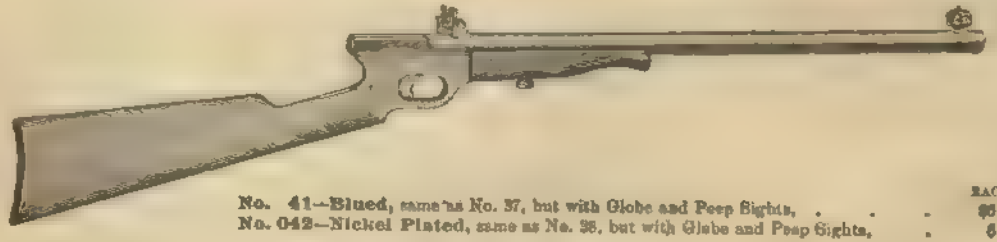
Quackenbush Safety Rifles.

22 Caliber, R. F.

Steel Barrel, Automatic Cartridge Extractor, Rebounding Lock, Black Walnut Stock, so fastened to the Barrel that the two may be easily and quickly separated, making the arm handy to carry in a trunk or package, whole length, 33 inches.

Blued.	EACH.	Nickel Plated.	EACH.
No. 35—18 in. Barrel, Weight, 4½ lbs.	$5.00	**No. 36**—18 in. Barrel, Weight, 4½ lbs.,	$6.00
No. 37—22 " " " 5 "	5.38	**No. 38**—22 " " 5 "	6.38

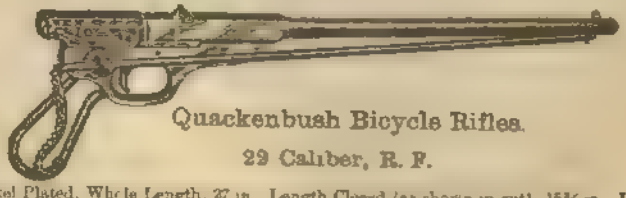
Shoots BB Caps, 22 Short, 22 Long and 22 Long Rifle R. F. Cartridges.



	EACH.
No. 41—**Blued,** same as No. 37, but with Globe and Peep Sights,	$6.00
No. 042—**Nickel Plated,** same as No. 38, but with Globe and Peep Sights,	6.00

One in a Box; Ten in a Case.

BICYCLE RIFLES.



Quackenbush Bicycle Rifles.

22 Caliber, R. F.

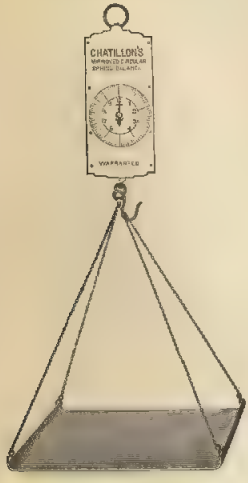
	EACH.
No. 8—All Steel, Nickel Plated, Whole Length, 27 in., Length Closed (as shown in cut), 15¾ in., Length of Barrel from Breech-block, 12 in., Weight, 31 ozs.,	$3.05

Chambered for the following Cartridges: 22 Long Rifle, 22 Long, 22 Short and BB Caps.

SPRING BALANCES.

IRON-CLAD ICE BALANCES.

BUTCHERS' CIRCULAR SPRING BALANCES.



Class C. Brass front
With square tin pans.

No. 262. 30 lbs. by 1 oz., pan 10½x12 in.
Each.....**$6.25**

No. 272. 60 lbs., by 2 ozs, pan 11½x12 in.
Each... **$7.50**

Class B.

Malleable iron cases, black japanned and ornamented Brass nickel plated dial plate

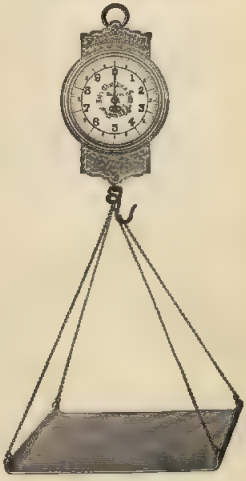
Compact and durable, not liable to get out of order.

Superior to any other ice balance in the market

No. 150. 200 lbs. by 5 lbs
Per doz.....**$54.00**

No. 160. 300 lbs. by 5 lbs.
Per doz.. **$66.00**

BUTCHER S' CIRCULAR SPRING BALANCES.



Class C. 7 inch dial, white enameled front and glass sash.
With square tin pans.

No. 5262. 30 lbs. by 1 oz.. pan 10½x12 in
Each **$7.25**

SCALE BEAMS.

Light—No. **2.**

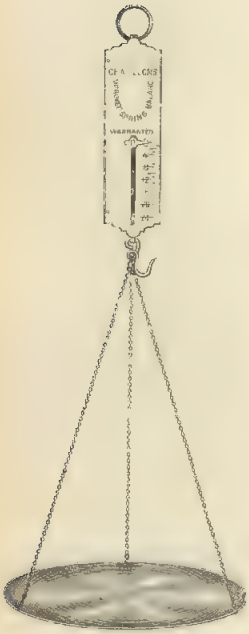
200 lbs..Each **$1.60** 300 lbs..Each **$2.10** 400 lbs..Each **$2.90** 500 lbs..Each **$3.50** 600 lbs Each **$4.00**

SPRING BALANCES.

STRAIGHT SPRING BALANCES.

Spring Scales are used for other purposes than weighing—as for instance, assorting, counting, multiplying, estimating, and also for various purposes of testing

All our Spring Scales are warranted to be accurate and perfect in workmanship



No. 41.
Class A-1. Brass front.
Extra quality.
With round tin pans.
25 lbs by ¼ lb Pans 9 inches diameter
Per doz.. .. ..**$7.00**

Class A. Brass fornt.
Ordinary quality.
With hooks.

No. 2000.
25 lbs. by ½ lb.
Per doz... .. ..**$1.50**

No. 30.
50 lbs by 1 lb
Per doz... .. ..**$3.00**

Class A-1. Brass front.
Extra quality.
With hooks.

No. 40.
25 lbs. by ½ lb
Per doz... .. ..**$4.00**

No. 70.
50 lbs by 1 lb
Per doz... .. ..**$8.00**

Class A-2 Brass front.
Extra quality
With hooks
No. 90.
100 lbs by 1 lb
Per doz. **$42.00**
No. 100.
125 lbs by 1 lb.
Per doz **$48.00**
No. 100A.
150 lbs. by 1 lb
Per doz.. .. ..**$60.00**
No. 100B.
200 lbs. by 2 lbs
Per doz.. .. ..**$72.00**

THE McGIEHAN

Combined Speedometer

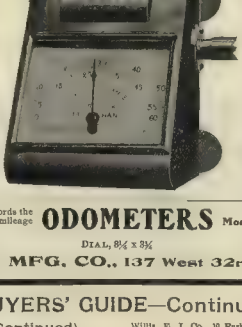
The most up-to-date and correct instrument on the market.

Absolutely guaranteed to give satisfaction.

Speed indicated from two to sixty miles.

Also mileage traveled each trip and total season's mileage.

Operates with metal-covered flexible shaft from dash to front wheel.



The McGiehan Speedometer is not a toy. No watch works, hair springs, etc., to get out of order.

But an instrument built to stand the speed and heavy strain of the automobile. We guarantee that you know your speed and mileage traveled at all times.

Model A accurately records the trip (reset at will) and total mileage traveled.

ODOMETERS

Model B records total mileage.

Write for Catalogue C

DIAL, 8¼ x 8¼

Telephone 3019 Madison

McGIEHAN MFG. CO., 137 West 32nd Street, N. Y.

BUYERS' GUIDE—Continued

Spark Plugs (Continued).

Gilbough, R. G., Room 312, 36 La Salle St., Chicago, Ill.
Hardy, R. E., 25 W. Broadway, N. Y. City.
Hastings & Anderson, 116 Lake St., Chicago, Ill.
Hatcher Auto-Parts Co., The, 136 Viaduct, Cleveland, O.
Hers & Co., 189 58th St., N. Y. City. Bougie "Hers."
Induction Coil Co., The, 9-10-11 Miller Bldg., Milwaukee, Wis.
Knoblock-Heddeman Co., The, South Bend, Ind.
Kokomo Electric Co., The, Kokomo, Ind.
Lipman, Carl E. L., Beloit, Wis. "Billy Hell."
Little & Kastman Co., 696 Harrison Ave., Boston, Mass.
McCord & Co., 34 Van Buren St., Chicago, Ill.
Mayo Damper Co., 303 Walnut St., Pottstown, Pa.
Mechanical Plug Co., 3934 Olive St., St. Louis, Mo.
Merkel Motor Co., Layton Park, Milwaukee, Wis. (Motor cycle.)
Mesgar, A. A., 223 W. 80th St., Brooklyn, N. Y. (National Sales Corporation, 226 Broadway, N. Y., Factory Sales Mgr.)
Miller, Chas. H., 97-101 Reade St., New York, N. Y.
Miller Mfg. Co., 823 Central Ave., Peekskill, N. Y.
Moeller, A. R. & Co., 1679 Broadway, N. Y. City. "Split Fire."
Never-Miss Spark Plug Co., Lansing, Mich. "Never Miss."
Oakes & Dow Co., The, 40 Sudbury St., Boston, Mass. "Comet" and Sealless.
Orswell Ignition Co., 102 Pearl St., Boston, Mass.
Parker Lock-Switch Co., The, Montclair, N. J.
Phoenix Automobile Supply Co., 3939 Olive St., St. Louis.
Pittsfield Spark Coil Co., Pittsfield, Mass. "Jewel."
Pope Mfg. Co., Hartford, Conn.
Post & Lester Co., The, 21 Sargeant St., Hartford, Conn.
Raish Auto-Supply Co., 145 Washington St., New York.
Richards, F. H., 15 Murray St., N. Y. City.
Richardson Engineering Co., 26 Pearl St., Hartford Conn.
Roche, Wm., Dry Battery Co., 52-54 Park Place, N. Y. City.
Rogers, Geo D., Automobile Parts Mfg. Co., 56 Kinsman St., Cleveland, Ohio.
Rulay, Leon, 180 West 39th St., N. Y. City.
Seidler-Miner Electric Co., 207-211 Jefferson Ave., Detroit, Mich. "S-M."
Shain, Chas. D., 79 Murray St., N. Y. City.
Smith, Geo D., Jr., Baldwins, L. I., N. Y.
Splitdorf, C. F., 23 Vandewater St., N. Y. City.
Thornton Mfg. Co., The, 306 E. 6th St., Chicago, Ill.
Tritt Electric Co., The, Union City, Ind.
Uncas Specialty Co., The, 21-37 Shipping St., Norwich, Conn.
Utility Co., The, 236 Greenwich St., N. Y. City.
Willits, E. J. Co., 19 Park Place, New York, N. Y. "Yankee" and "H. M."

Spars.

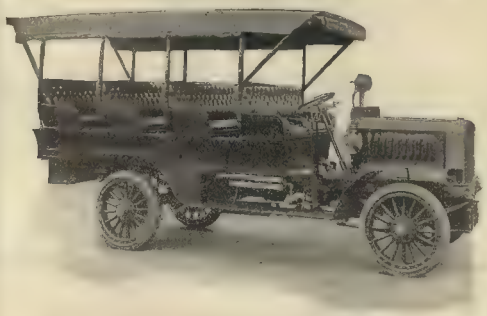
Fraser Hollow Spar and Boat Co., Greenpoint, L. I., N. Y.
Pigeon Hollow Spar Co., 115 Condor St., East Boston, Mass.

Speed Indicators.

Bullard, J. H., Springfield, Mass. (Speedometer, Odometer, Clock, combined.)
Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, Ill. Boyer.
Chrono-Velocimeter Co., The, 1213 Filbert St., Phila., Pa.
Electric Speed Meter Co., The, 141 E. 6th St., Cincinnati, Ohio
Jones, Jos. W., 137 W. 32nd St., N. Y. City. "Jones." (Auto., Boat and Cycle.)
Lipman, Carl E. L., Beloit, Wis.
Loring, E. J., Somerville, Mass.—(Also speedometers and odometers combined.)
McGiehan Mfg. Co., 137 W. 32nd St., N. Y. City.
Monitor Speed Recorder Co., 247 Pearl St., Cambridge, Mass.
Motor Car Specialty Co., 143 B. State St., Trenton, N. J. (Combination speed meter, odometer and clock.)
Rollins Mfg. Co., Park Square Motor Mart, Boston, Mass. (Combined speedometers and odometers.)
Smith, H. H. Mfg. Co., Springfield, Mass. (Also speedometer and odometer, combined.)
Uncas Specialty Co., 21-37 Shipping St., Norwich, Conn.
Veeder Mfg. Co., Sargeant and Garden Sts., Hartford, Conn. "Veeder Tachometer."
Warner Instrument Co., 51 Roosevelt Ave., Beloit, Wis. "Warner."
Webb Co., The, 1679 Broadway, N. Y. City.
Wheelock Motor Car Clock Co., Tremont Bldg., Boston, Mass. (Speedometers and odometers combined.—"Wheelock.")
Wood Speedometer Co., 105 Sudbury St., Boston, Mass.

Iroquois Truck

Built Like a Locomotive



Standard Iroquois, 60 H. P. Chassis, Equipped with 15 Passenger Body

Our years of experience in heavy work especially adapts us for manufacturing trucks that cannot be surpassed for reliability and durability. Everyone interested in heavy traffic vehicles should visit our exhibit at the Armory Show in New York or Chicago. We manufacture also automobiles for railroad use, built along the lines of locomotives for construction and strength with capacity for from 30 to 50 passengers.

Our 4 cylinder 20 H. P. Runabout, equipped with solid tires is a revelation to the business man who has use for a car of this kind. It never lays down and will last for years. Visit us at the shows or write us for information.

IROQUOIS IRON WORKS

BUFFALO, N. Y.

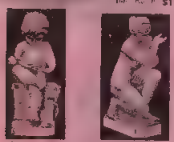
Sales Department—G. MIDDLETON, 1900 Land Title Bldg., Philadelphia, Pa.

GENUINE ITALIAN CASTELLINA MARBLES

Selected first quality Castellina marble, sculptured by the best artists in Italy. These pieces were chosen by our own buyer, who personally inspected the work of many different artists. By importing them direct, we are able to offer these *genuine Italian* marble pieces at prices never before named in America. Do not confuse them with goods of inferior material and workmanship. If you will order a few sam, le pieces you will find these are goods on which you can advise your money and

R434. Head of [illegible] Each $1 75
R436 [illegible] Each $6 25
R437. Bust of [illegible] Each $1 95
R438—As above [illegible] Each $5 50

R432—Venus [illegible] Each $1 50
R433. As above [illegible] Each $5 00
R434. As above [illegible] Each $10 00
R435. [illegible] Each $1 87



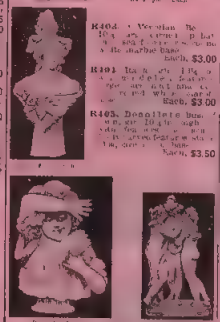
R426. [illegible] Each $1 75

R437. As above [illegible] Each $8 75
R439. [illegible] Each $2 20
R431. As above [illegible] Each $7 50
R416. Bust of [illegible] Each $2 00

R417. [illegible] Each $2 25
R401. [illegible] Each $2 65

R400. [illegible] Each $2 50
R403. Bust of [illegible] Each $6 50

R404. Venetian [illegible] Each $3 00
R401. [illegible] Each $3 00
R405. Decollete bust [illegible] Each $3 50

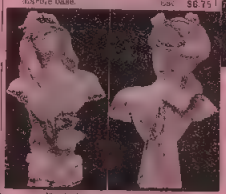


R422. [illegible] Each $3 75
R428. The Three Graces. [illegible] Each $4 25 $9 50
R429. [illegible] Each, $6 00

R414. [illegible] Each $7 25
R421. [illegible] Each $6 50
R412. [illegible] Each $4 85
R406. Shepherd boy and girl [illegible] Each $6 50

R413. "M[illegible] Each $5 50

R407. [illegible] Each $5 75
R408. Bust of child, 13½ in., [illegible] chaplet and shoulder band [illegible] $6 75



R409. [illegible] Each $8 50
R420. "Blue Veiled Lo[illegible] $9 75

Each, $4.50 Each

R410. "Cupid" leg lit, well modelled figure, with white and flowers, round white marble base. Each $12 75
R411. "Nymphs," 20½ in. full length figures, exquisitely sculptured, round base. Each $14 50

R425. [illegible] Each $15 00
R419. "Prince of Amour" [illegible] Each $17 50

R [illegible] Each $22 50

R423. [illegible] $27 50

R424. "Awak[illegible] $37 50

PEDESTALS.

R439—Ht. 35½ in. square top, fancy base. Each $5 00
R440—[illegible] Each $8 50
R441—41½ in. [illegible] Each $9 50

ADDITIONAL numbers in genuine Italian Marbles, Busts and Figures will be listed in our October catalogue.

JAPANESE DEPT.

We import all Japanese goods direct, else these prices would be impossible. We went into the Japanese field in a big way at just the right time, and the results have surpassed our hopes. Our all-the year organization in Tokio and other Japanese points keeps us in touch with the sources of supply. Witness the many new things not heretofore shown in America. Importing direct and selling through catalogue, we are able to put an up-to date line before the American trade at prices which would be simply impossible for the jobber who buys through commission people and sells through traveling men. We take no chances of non deliveries; all goods here listed *are actually in our house.* There is profit for you in this bit of advice – **Keep your eye on our Japanese Department.**

Push Japanese goods! They are gilt-edge merchandise. They will earn a profit especially when you buy them here. Everyone is interested in things "Jappy." Heretofore the article has been to get enough of these to selling goods. Now [illegible] stock is complete with a full line of [illegible]

JAPANESE LACQUERED TRAYS

L1081 [illegible] round trays black lac quer hand painted inside decoration in gilt. Very pretty tray for hair pins, jewelry or pen rolls. 1 doz in pkg. Doz. 39c

L1078 + Round, gilt in plain, popular [illegible] Doz. 42c

L1084 + Pin [illegible] Doz. 42c

L1075 [illegible] Doz. 60c

L1074 + Black lacquer 9½x4¼, gilt hand painted decoration [illegible] Doz. 45c

L1076 + Black [illegible] Doz. 65c

L1070 + Brown [illegible] Doz. 87c

L1081 [illegible] of wood [illegible] 4 sections, assid 4 designs. 1 doz in pkg. Doz. $1.15

L1077 + Deep shape, lacq [illegible] coration in gilt [illegible] Doz. 95c

L1082 + [illegible] pkg. Doz. $1.25

L1086 Lacquered [illegible] center panel [illegible] Each $2.00

L1093 [illegible] orations in gold [illegible] Each $2.25

L1092 [illegible] rounded corners [illegible]

L1088 [illegible] Each $2.25

L1080 [illegible] Each $3.25

L1089. 8¾x6¾, [illegible] paper mâché, lacquered brown lacquer with elaborate floral decorations in gold, [illegible] Each $3.75

FANCY LACQUERED TRAYS IN SETS.

L1083 [illegible] with rim 2 in high, fancy gilt corners, elaborate hand painted inside decoration [illegible] 75c

L1085 [illegible] hand painted decorations in gilt. Assid 2 sizes. 1 doz in pkg. Per dozen 75c

L1090 [illegible] [illegible] Each $1.00

LACQUERED FANCY BOXES Nested.

Many [illegible] with lock and key. Measure [illegible] to fit inside boxes. Assid. pieces packed to match in sets.

L1036 + Outer box 8x4½x3¾, black lacquer, hand painted, gilt decorated covers of Japanese [illegible] 3 in nest. 3 nests to pkg. 9 in set. Nest of 3. 35c

L1039 [illegible] 6x3x1 [illegible] [illegible] Nest of 3. 50c

L1037 [illegible] [illegible] Nest, wrapped. Nest of 3. 50c

L1038 [illegible] 7¾x3¾x3¾, brown lacquer, hand painted decorations in gold and colors, smooth rub finish. 3 in nest. Nest of 3. 60c

L1041 [illegible] beveled edge, black under [illegible] 85c

L1042 [illegible] and hand painted [illegible] 3 in nest. Nest of 3. $1.40

L1044 [illegible] black lac [illegible] decora [illegible] tions. Nest of 3. $1.10

L1040+ Very rich [illegible] cover box [illegible] [illegible] [illegible]

L1048 [illegible] [illegible] Lacquered and bronze mixed. Lacquered [illegible] $1.95

L1049 [illegible] [illegible] Nests of 2. $2.10

JAPANESE FANCY LACQUERED GLOVE AND HANDKERCHIEF BOXES.

L1000 [illegible] 7x4¾ [illegible] hand painted [illegible] doz. 1 doz in pkg. Doz. 95c

L1001 [illegible] box 6 [illegible] 9½ x 4 [illegible] pkg. Doz. 95c

L1002 [illegible] 9¼x4¾ [illegible] Doz. $1.25

L1003 [illegible] 9x3½, [illegible] 1 doz in pkg. $1.25

L1002 [illegible] [illegible] [illegible]

REVOLVERS.

"IVER-JOHNSON" PERFECT GRIP.

We call it the "Perfect Grip" because it is so entirely satisfactory and fills the hand to such a nicety. "Iver-Johnson" Revolvers equipped with this grip, will meet ready sales among police officers, night watchmen, target shooters, etc. A good house weapon and none too large for the pocket. They can be removed and be replaced with smaller ones at any time if you care to. Made of hard rubber.

Price . . . . . $.....

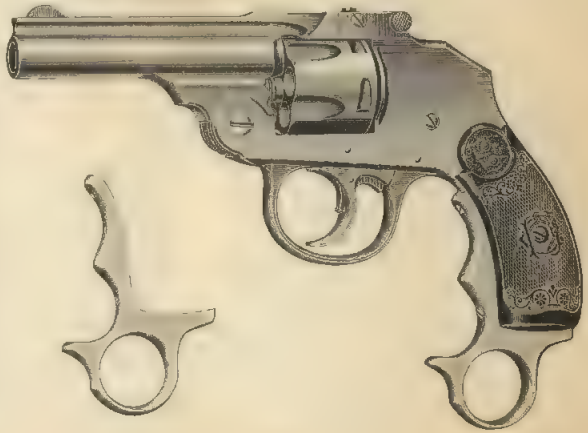
Either the "Iver-Johnson Perfect Grip" or "Iver-Johnson Revolver Grip" can be furnished on the "Iver-Johnson" Safety Hammer and Hammerless Revolvers, in 32 and 38 calibers, with 3, 3½, 4, 5 and 6 inch barrels for an extra charge of **$1.00.**

"IVER-JOHNSON" REVOLVER GRIP.

This device, as illustrated, attached to one of our revolvers, is a new and original feature. Just what it indicates, a "Revolver Grip."

Heretofore, to obtain a firm, strong grip on a revolver, it has been necessary to design the same with a long sweep of the handle with its disadvantages of weight and cumbersomeness. The "Iver-Johnson Revolver Grip" is detachable and its use is optional with the user.

There are occasions where circumstances demand unusual accuracy, and when one's life almost depends on an unfailing and absolute grip on his revolver, and at such times the "Iver-Johnson Grip" is invaluable. Its use would prevent the very common occurence of having a revolver knocked from the hands of the holder, and would also preclude the possibility of the same being wrenched from the hands by superior strength at just the very moment when it is most required for defense.



Price . . . . . $

REVOLVERS.

"IVER-JOHNSON" AUTOMATIC, SAFETY HAMMER.

SPECIFICATIONS

22 CALIBER.

Weight, 12 oz.; cartridge, R. F.; barrel, 3 inch regular; finish, nickel plated or blued; chamber, 7 shot.

Extra length barrels can be furnished with this revolver, 4, 5 and 6 inches long. We can also furnish a 2 inch barrel on this revolver if desired

Price.. .. .. .

JAPANESE LACQUERED WOOD SPECIALTIES.

L1126. Puff Box. Dec. in red ... Doz. 69c

L1064. Thread Box. ... 69c

L1058. Puff Box. ... 87c

L1054. 9in Bucket. L1060. 7½in Box. L1059. 6½ in Box.

L1056. Bamboo Box. ... Doz. assrt. 90c

L1060. Puff Box. ... 92c

L1058. Puff Box. ... $1.25

FANCY LACQUERED JAPANESE TABLES.

L1280. ... $1.35

P126. ... $1.45

L1264. ... $2.25

L1265. ... $4.50

JAPANESE FRAMED PICTURE.

L1277. ... Doz. 90c

JAPANESE VELVET TAPESTRY PICTURES.

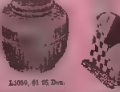
L1283. ...

JAPANESE INLAID WOOD SPECIALTIES.

L1211. Book Shape Trick Box. ... 96c

L1114. ... $3.00

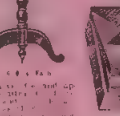
L1113. ... Doz. 45c



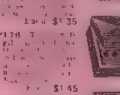
L1319. Folding Picture Frame Pocket Book Rack. ... Each in box 65c

L1111. Jewelry Box. ... 80c

L1117. Jewelry ... $1.00

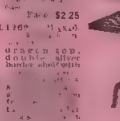


L1116. Ring Box. ... $1.00



L1114. Jewelry Box. ... 60c

L1011. ... In colors, shaped ... $2.35



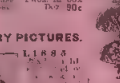
FANCY JAPANESE TABLE.

L1264. ... wood inlaid ... top, 4 ... and ... center ... Each $1.75

JAPANESE BRASS GONGS.

L1141. ... 30c

L1144-1146. ... Each set in box. Set, 90c



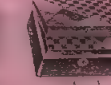
L1142. ... Set, $1.50

L1143 and L1145.

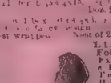
JAPANESE BRASS LANTERN.

L1277. ... Doz. $3.75

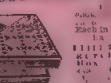
FANCY JAPANESE PHOTO FRAMES.



L1085. ... 39c



L1248. ... $1.40



L1247. ... $1.50

L1289. ... $1.50

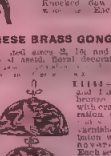
L1268. ... $2.10

L1218. ... $2.25

L1270½. ... $2.75

L1260. ... $3.25

A SWELL "QUARTER" ITEM.



L1276. ... $2.25

L1274. ... Doz. $3.35

L1278. ... Doz. $3.75

FANCY JAPANESE PHOTO FRAMES Cont'd.

L1275. ... $4.90

JAPANESE CARVED BONE DAGGERS.

L1111. ... 50c

L1120. ... 75c

JAPANESE LEATHER GOODS.

Japanese grained leather—leather lined.

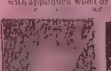
L1191. Card Case. ... Doz. $2.20

L1192. 7½ Sash.

L1197. Card Case. ... 37c

L1294. Pocketbook. ... 55c

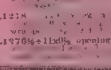
L1293. 6¼x3½in. open heavily embossed ... 65c



L1196. ... 85c

L1198. ... 85c

JAPANESE MISCELLANEOUS SPECIALTIES.



L1191. ... 75c

JAPANESE PENCIL BOX.

Doz. 45c

JAPANESE PIN CUSHIONS.

L1339. ... Doz. $2.00

L1342. ... Doz. $3.25

LACQUERED HANDKERCHIEF AND GLOVE BOXES Nested.

Each fitted with lock and key. All measurements are for outside boxes.

L1001 ... and bird designs done in gold and colored bronzes. ... Nest of 3, 35c

L1005 ... Gloves, lily designs in colors on white ground. L1005, 2 in nest ... Nest of 2, 35c

L1010 ... Violet ... and Japanese scenery in gilt and colors, 2 in nest. Nest of 2, 35c

L1009 ... Gloves, ... lacquer, ... gilt flowers and ... Nest of 2, 50c

L1012 ... Violet ... with panel ... 2 in ... Nest of 2, 50c

L1013 ... Gloves, ... 2 in ... Nest of 2, 50c

L1028 ... Violet ... 2 in ... Nest of 2, 60c

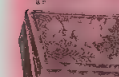
L1021 ... Glove ... 2 in ... Nest of 2, 80c

L1022 ... Violet ... 2 in ... Nest of 2, 70c

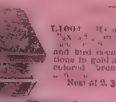
L1023 ... Violet ... 2 in ... Nest of 2, 70c

L1024 ... Violet ... 2 in ... Nest of 2, 70c

L1044 ... Violet ... 2 in ... Nest of 2, 75c

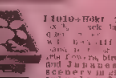


L1038 ... Violet ... 2 in ... Nest of 2, 75c

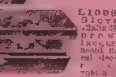


L1018 ... Violet ... 2 in ... Nest of 2, 87c

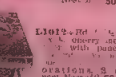
L1019 ... Glove, 12 ... 2 in ... Nest of 2, 87c



L1024 ... Violet ... 2 in ... Nest of 2, 87c



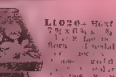
L1037 ... Violet ... 2 in ... Nest of 2, 90c



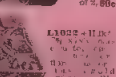
L1110, ... lacquered ... and flowered ... and gilt ... brown lacquer ... top, gold crane ... removal compartment ... with ... Each, 55c

L1033—Glove ... inches ... 2 in nest assorted. ... Nest of 2, $1.25

JAPANESE FANCY LACQUERED WOOD SPECIALTIES.



L1007, Children's Toy Trunks ... lock and key and key rings. ... Assrtd ... black. Each neat in size ... Nest of 3, 50c



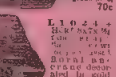
L1109, Writing Desk ... key. ... with ... partition tray for pens, ink, pencils, etc., 3 under-compartments for paper, envelopes, etc., lock and key. Each in gift wrapper, ... $1.25

JAPANESE FANCY LACQUERED NOVELTY BOXES.

Each with lock and key.

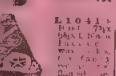
L1008, ... Dozen box covers, ... gold, ... in one. ... Doz. $1.10

L1061, ... Oval ... assrtd. oak and brown, ... with gold and color decorations, ... and key. 1 doz. assrtd. in pkg. ... Doz. 95c



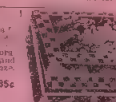
L1051, Chinese Ivory Dress Silk Case, ... assrtd. decorations in pkg. of ... Doz. $1.50

JAPANESE LACQUERED PENCIL BOX



L1282—Measures ... Black ... and painted ... Each, ... 1 doz. in pkg. ... Doz. 98c

SET OF 2 ROUND BOXES AND 12 TRAYS—Nested.



L1000, ... Consisting ... round boxes, lacquer ... with hand painted ... set ... boxes and 12 trays, ... Set, 38c

LACQUERED JEWEL CABINETS.

L1100—... drawers with metal pulls ... black and brown lacquer, gold decorated fronts, 1 doz. in pkg., assrtd. ... Doz. 85c

L1101—... drawers, fronted ... metal bound corners, assrtd. ... 1 doz. in pkg., assrtd. ... Doz. $1.75

L1102, ... trimmed and with metal pulls, hand painted and enamel ... fine in pkg., assrtd. ... black and brown lacquer. ... Doz. $3.00

L1107, $2.00 Doz.

L1100, 40c Each.

L1106, 60c Each.

L1108—Brown lacquer ... sitting in gold and ... fronted ... drawers in lock compartment ... imitation bronze ... door ... lock and ... to ... Each, 42c

L1104—Similar to L1103, ... Each, 60c

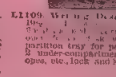
L1105—Similar to L1103, ... Each, $1.00

L1105, $1.00 Each.

JAPANESE LACQUERED PAPIER MACHE CRUMB TRAYS AND BRUSHES.

L1095, ... inch fancy ... oval back, ... Doz. 10 in pkg. ... Doz. 96c

L1096—... edges, gold and colored floral ... decorated, 10 in pkg., ... brush with ... Doz. $1.25



L27, ... shapes ... Doz. $1.50

L1094, ... inches, ... scalloped edge, black ... with ... Doz. $2.25

JAPANESE LACQUERED WALL BRACKETS.

Careful selection of best selling numbers of these ... ornamental ... for the Home.

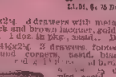
L1278, ... Doz. $1.00

L1279, ... Doz. 96c

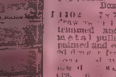
L1270, ... for ... Doz. $1.85

L1280—... Doz. $3.00

L1281—... Doz. $4.10



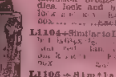
L1282, ... Each, $1.00



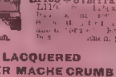
L1283—... shelves ... heavy ... finish, black or cherry, ... with ... openings with panel effects, 2 ... Each, 50c

L1287, ... Each, $1.25

LACQUERED JAPANESE CORNER BRACKETS.

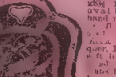


L1284, $2.00 Doz.



L1285, ... Doz. 50c

L1286—... Each, $1.00



L1286, $1.00 Each.

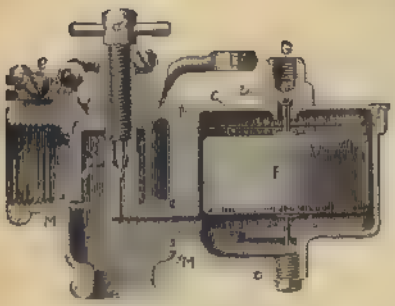
JAPANESE LACQUERED CLOCK FRAME.

L1409 ... Doz. 96c

Items marked with a star in front of the price (as ✱$2.00) are specials at that figure for the current month. The same items will be found on the ... pages of the same ... with full descriptions.

KINGSTON SPECIALTIES

Kingston Carburetors



Old Model-Type. A

THE KINGSTON CARBURETOR derives its name from the fact that it is the crowning achievement of Mr. Geo. Kingston, who has by his untiring efforts to perfect the **accepted power** for the automobile, and make it as flexible and reliable as the steam engine, become well known to the automobile trade as an expert on throttle control for the gasoline motor.

The Kingston Carburetor is designed to supply the increasing demand of the automobile trade for a carburetor that will give perfect flexibility of control over the gasoline motor.

The "THROTTLE" is regarded by all who are familiar with mechanical engineering as the only perfect means of controlling power. It gives more power and energy, for less power THROTTLE the energy. This applies to all means of producing power. Whether gas, steam, electricity, compressed air, water or whatever energy is used it must be under THROTTLE CONTROL or the power will be wasted.

In all modern gasoline motors the gas producer or carburetor is in all cases worked by the inspiration stroke of the motor (suction). This suction will draw a fine spray of the fuel from a small nozzle which will become thoroughly carburetted by contact with the blast of air rushing through the restriction of carburetor. This carburetted gas must be **THROTTLED without effecting its quality.**

In all other forms of carburetors that are provided with a throttle and are supposed to be "THROTTLE", some form of throttle is placed between the spraying nozzle and the motor and supposed to throttle the carburetted mixture between carburetor and motor, the **fuel adjustment remaining the same for all speeds. This method will not give perfect results,** as a fuel adjustment that would give perfect results at low speed and closed throttle, with practically no suction on spraying nozzle, would surely flood the cylinder at high speed and open throttle; and with any adjustment that is perfect for high speed and open throttle they will not furnish sufficient fuel at low speed and closed throttle.

In the "KINGSTON CARBURETOR" the carburetor forms a part of the THROTTLE, the spraying-nozzle is placed where the suction is greatest at all speeds, insuring a positive fuel feed at any position of the throttle, and the fuel needle-point valve is regulated by every movement of the throttle valve giving a mixture that is absolutely perfect at every position of the THROTTLE.

Furnished in the following sizes TYPE A

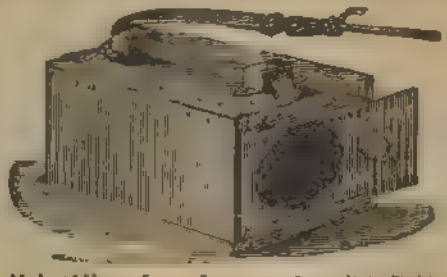
PRICES

1¼ inch Standard Pipe Size	**$21.50 each**
1 1-2 " " " "	**25.20** "
2 " " " "	**28.80** "

See Terms page 3, and Discount sheet next back cover.

SIMMONS HARDWARE COMPANY

KING'S PATENT LIVE BIRD TRAPS.



Made of Heavy Iron. Insures an Immediate Flight.

No. 1—King's Patent Live Bird Trap, Non-Automatic, to pull with rope. ..... EACH $10.00

Hand Traps.

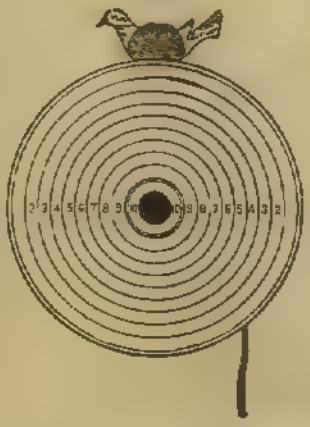
No. 10—J. C. Hand Traps..... EACH $4.00

Is a Simple, Reliable, Portable Clay Pigeon Trap, designed to be held in the hands, and to throw any of the Standard Targets. Made of Malleable Iron, Nickel Plated and Oxidized Copper.

Packed, One in a Wooden Box; Weight, about 7 lbs.

SIMMONS HARDWARE COMPANY

MECHANICAL SHOOTING GALLERY TARGETS.



EACH.

No. 190—12 in., Plain Round Iron, Ringing Gong when Bull's Eye is Hit, Self Setting, for **22 Caliber Cartridges,** $2.80

No. 25 12 in., Steel Face, ¼ in Thick, when the Bull's Eye is Hit a Bird is thrown up and the Bell rings, similar in sound to an Electric Bell, for a few seconds, Set by Rope from Stand, $7 00

Cut shows No 120.

EACH.

No. 120—14 x 16 in., Heavy Iron Rooster, Small Chicken Springing on his Back when Bull's Eye is Hit, Nicely Painted, for **22 Caliber Cartridges,** Set by Rope from Stand, ... $6.50

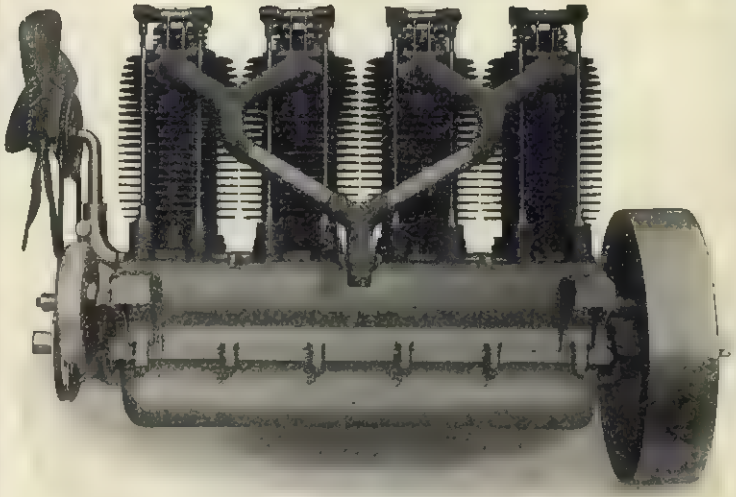
No. 11 Four Birds and Two Stars Falling Back when Hit, for **22 Caliber Cartridges,** Set by Rope from Stand, 6.00

EACH.

No. 220—12 in., Heavy Iron, Comic Figure Rising and Ringing Gong when Bull's Eye is Hit, for **22 Caliber Cartridges,** Set by Rope from Stand, 5.50

The Reeves

4 CYLINDER 4 CYCLE AIR COOLED AUTO ENGINE



These engines furnished on contract for 1907 deliveries in sizes from 12 to 45 H. P.

We can make immediate delivery of a small number of Model "E" Engines. 4 cylinder, 4 x 4, 20 H. P.

Every engine tested as to H. P. and also in chassis on road if desired. Crank shafts forged from solid steel billet; crank shaft, cylinder, piston and piston rings ground; crank case all aluminum; brass intake manifold.

The best built air cooled auto motor in America.

Demonstration any day. Come quick if you want them.

Prices and full particulars on application.

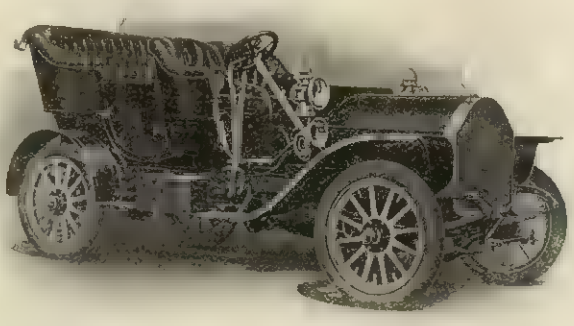
The Aerocar which won first prize, a handsome gold cup, in the efficiency test at Minneapolis, Saturday, August fourth, was equipped with "The Reeves" Model "E" Engine.

Reeves Pulley Co., Columbus, Ind.

KNOX WATERLESS

"Heat radiated by direct means, without water, and proved by the Glidden Tour to be the most efficient system yet devised."

The latest addition to the KNOX WATERLESS line is the car illustrated below, the Model "H." It embodies more points of merit, and contains more high grade material and workmanship than any other car of equal price. It is built not to look at, but to run all the time, and we are confident from months of severe testing, of its ability to fulfil all the requirements of a practical touring car under any conditions. It is simple in construction, carrying the three-point suspension principle to a practical conclusion.



25.30 H. P. Price $2500.

The power plant consists of three units, and is carried on three points only, one of them a trunnion, so that disalignment is absolutely impossible. The advance circular is ready; let us mail it to you.

SPECIFICATIONS.

Four cylinders, each 4⅜ in. x 4¾ in.
Capacity, five persons.
Bevel gear drive, ball and roller bearings.
Chrome nickel steel drive gears.
Selective transmission, three speeds forward and reverse.
Speed, 45 miles an hour.
Made in KNOX style, the sterling mark of automobiles.

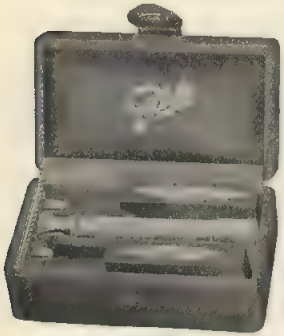
Horsepower, 25 30.
Wheelbase, 102 in.
Tread, 56 in.
Weight, 2250 pounds.

Some territory is still open for 1907 for both our pleasure and commercial cars; better write.

KNOX AUTOMOBILE COMPANY,

Member A. L. A. M. SPRINGFIELD, MASS.

GILLETTE RAZORS AND BLADES.



No. 460.

No. **460.** Triple Silver Plated Handle, **12** Blades, Cowhide, Morocco Grain Case. ..... Each $5 00

Extra Blades. Put up in Packages of **10** Blades ..... .Per Package 50

No. **461.** Triple Silver Plated Handle, **12** Blades, Good Quality Badger Hair Telescope Lather Brush, Stick Shaving Soap in Triple Silver Plated Holder, Cowhide, Morocco Grain Case .. .. Each 6 50

No. 461.

No. 00.

No. **00.** Triple Silver Plated Handle, **12** Blades, Good Quality Badger Hair Lather Brush, and Stick Shaving Soap in Triple Silver Plated Holder, Goat Skin, Seal Grain Case..... .....Each $7 50

KRUSIUS BROS.' RAZORS.

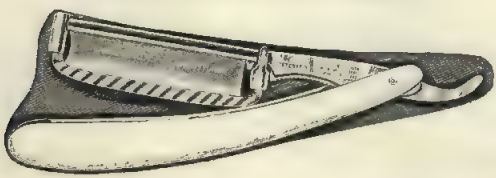
No. 67.

No. **67**, 5-8 Inch, Round Point, Three-Quarter Concave, Black Hard Rubber Handle.....Per Dozen $24 00

No. 66.

No. **66**, 5-8 Inch, Square Point, Full Concave, Gun Metal Tang, Black Hard Rubber Handle .. . Per Dozen $30 00

CURLEY IDEAL SAFETY RAZOR.

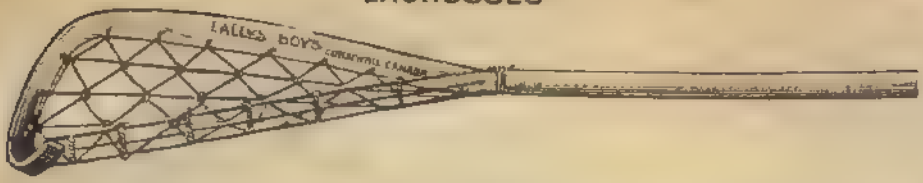


The Guard is adjustable and reversible and can be changed in an instant to work on either side of the face.

Razor with One Blade, Black Rubber Handle .. . . Each $2 00
Extra Blades, Packed in Aluminum Sheaths. .... " 75

Half Dozen in a Box.

LACROSSES



Lally's Boy's

Made of second growth hickory, perfectly constructed and strung with rawhide. This stick is unquestionably the highest grade Boy's Lacrosse manufactured in Canada and should not be confused with the ordinary soft maple or ash stick **Price** **80c each**

Lally's Clock Cord (not stamped)

Made of second growth hickory same shape as Lally's No. 1, and are equal to the best Clock Cord Lacrosses on the market apart from Lally's Extra Special and Lally's Special. This is a trade winner and can be stamped by yourselves **Price** . **$3.20 each**

Lally's Men's Single Strung Lacrosse

This stick does not bear our name Is made of second growth hickory and is good value for the money **Price** .. .. **$1.50 each**

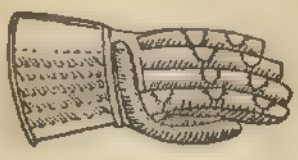
Boyd's Selected Ordinary Gut Strung Sticks Frames of selected second growth hickory and perfectly balanced. The best value at price. Home, 4 ft., 2 in., defence, 4 ft., 6 in.. .. .. **$1.40**

Boyd's Selected Youths Sticks Length 3 ft Selected hickory frame Equal in quality to any stick made **$0.80**

Boyd's Small Boys' Stick Length 3 feet Selected hickory frames, same quality as men's sticks **$0.35**

Lacrosse Gauntlets

"League" Lacrosse or Hockey Glove



Superior Quality Gold Cape leather with white kid joints Absolute protection to every part of hand. **Price** per pair **$4.00**

Lacrosse Balls

Lacrosse Balls, regulation size, each **$0.70**

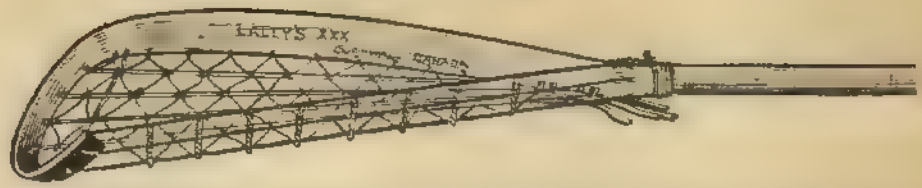
Cricket Balls

C. G. Hearn Silver Treble Seam Balls .. .. **$3.00 each**

J Wisden, London, Match Balls .. .. **2.50 "**

LACROSSES

Lally's XXX Lacrosse



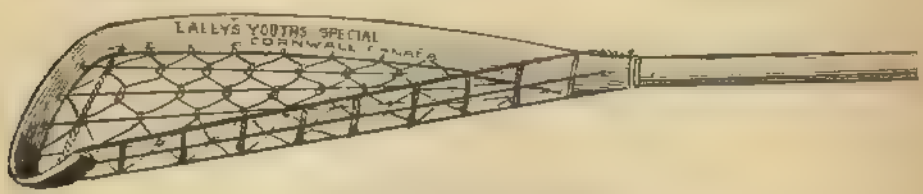
Made of second growth hickory, double strung with our own make of rawhide gut, a very popular lacrosse.

Price **$2.80 each**

Lally's No. 1

Made of second growth hickory, double strung with rawhide gut manufactured at our factory.

Price **$2.10 each**



Lally's Youth's Special

Three feet ten inches in length, made of second growth hickory, and strung with cloth cord. The nearest lacrosse for youths manufactured.

Price **$2.50 each**

Lally's Youth's

Made of second growth hickory and strung with rawhide. Made same shape and size as Lally's Youth's Special.

Price .. .. **$1.50 each**

See Terms page 3, and Discount sheet next back cover.

HEADLIGHTS.

20 INCH STANDARD SQUARE PLAIN CASE.

FIG. 9596.

DESCRIPTION, FIG. 9596.

Side number glass, 6 x 14 inches extreme height, 47 inches, bottom board, 29½ x 18½ inches; weight, net, 80 pounds, weight, crated, 95 pounds.

PRICES, FIG. 9596.

	Each.
No. 7, with front and side numbers	$47 50
No. 7, with side numbers	46 25
No. 7, with plain case	45 00

DESCRIPTION, FIG. 9597.

Side number glass, 6 x 14 inches extreme height, 47 inches, bottom board, 27½ x 17 inches; weight, net, 70 pounds; weight, crated, 90 pounds.

PRICES, FIG. 9597.

	Each.
No. 8, with front and side numbers	$45 00
No. 8, with side numbers	43 75
No. 8, with plain case	42 50

Can be furnished with Hamilton side numbers if desired.

DESCRIPTION, FIG. 9598.

Cases made with pressed cold rolled Bessemer steel panels, corner lugs, bee sting, extra heavy steel, side glass, 7 x 13 inches; weight, net, 95 pounds, weight crated, 130 pounds.

PRICES, FIG. 9598.

No. 4, with 18 in. deep reflector, ea.	$61 50
No. 6, with 18½ in. deep reflector, ea.	60 00

DESCRIPTION, FIG. 9599.

Cases made with pressed cold rolled Bessemer steel panels, corner lugs, bee sting, extra heavy steel, side glass, 7 x 13 inches; weight, net, 95 pounds, weight crated, 130 pounds.

PRICE, FIG. 9599.

No. 5, with 18½ inch deep reflector, each $48 75

18 INCH STANDARD SQUARE PLAIN CASE.

FIG. 9597.

23 INCH STANDARD SQUARE FRONT AND SIDE NUMBER.

FIG. 9598.

23 INCH STANDARD SQUARE SIDE NUMBER.

FIG. 9599.

ALL STEEL WABASH HEADLIGHTS.

DESCRIPTION, FIGS. 9600 AND 9601.

These Headlights are made in 12, 14, 16, 18, 21 and 23 inch sizes, with reflector of increased depth. Equipped with Wabash latch glass fastener, prevent[illegible] from [illegible] Has [illegible] lower [illegible] and [illegible] the flame. These Wabash Headlights are constructed with [illegible] and [illegible] from [illegible] one piece [illegible] one piece [illegible] side [illegible] [illegible] to [illegible] door. The steel which encloses the number frame in top of door is made of one piece, thereby doing away with the two pieces commonly used and [illegible]. This improved method will [illegible] [illegible] [illegible] [illegible] door in these cases [illegible] made to [illegible] [illegible] as desired. The case is circular style and consists of Nos. 14, 20, 21 and 23 gauge pickled and oiled Bessemer steel, reinforced with heavy iron and angle iron fastened with rivets spaced one inch apart.

16 inch—Extreme height, 20½ inches, bottom, 9 x [illegible] inches, side number glass, 5½ x 5 inches; weight, net, 60 pounds; weight crated, 65 pounds.

18 inch—Extreme height, 24 inches, bottom 20 x 15 inches, side number glass, 9½ x 5 inches; weight, net, 75 pounds; weight, crated, 100 pounds.

FIG. 9600.

PRICES, FIG. 9600.

16 inch, with side number, each	$1 75
18 inch, with side number, each	2 25
18 inch, with plain case, each	2 00

FIG. 9601.

PRICE, FIG. 9601.

18 inch, with front and side number, each $3 50

HEADLIGHTS.

10 INCH SQUARE MOTOR HEADLIGHT.
FOR CABLE OR MOTOR CARS.

FIG. 9602

DESCRIPTION.
FIG. 9602

Has dash-lever attachment for use on cable and motor cars and is fitted with engine.

Case 9¾ inches high, 10 inches wide, 9½ inches in depth. Reflector made of copper and nickel plated and silver plated, 10 inches in diameter, 8½ inches in depth. Burner regular locomotive headlight pattern, takes Mosbring circular wick 5 inches long, net weight 16 pounds, gross weight 18 pounds.

PRICE, FIG. 9602.

Each ... $13 75

10 INCH TRACTION ENGINE HEADLIGHT.

FIG. 9603.

DESCRIPTION.
FIG. 9603

Case 21¾ inches high, 13 inches wide, 9½ inches in depth.

Reflector made of copper and nickel plated and silver plated, 10 inches in diameter, 8½ inches in depth.

Burner regular locomotive pattern, takes Mosbring circular wick 5 inches long.

Net weight, 16 pounds, gross weight, 23 pounds.

FOOT PIECE

FIG. 9604

Foot piece for 10 in. Light, Fig. 9603, to support on boiler head.

BRACKET

FIG. 9605

Bracket for 10 and 12 inch Headlight to support on boiler head.

PRICE, FIG. 9603.

Headlight complete with foot piece and bracket ... $13 75

When ordering specify whether with or without the bracket and foot piece.

ELECTRIC HEADLIGHTS.

12 INCH.

FIG. 9606

10 INCH.

FIG. 9607.

DESCRIPTION, FIGS. 9606 AND 9607

Figs. 9606 and 9607 show two small Headlights, which have been found very useful to place on boiler head of locomotives using gas electric or acetylene headlight in

Electric or acetylene lamps fail at times, the light gives out, and to overcome this these two small headlamps have been designed.

They are carried as emergency lamps and shed a bright light quite a distance on the track. Furnished with or without numbers, as shown in Figs. 9606 and 9607.

PRICES, FIGS. 9606 AND 9607.

Fig. 9606, with front numbers, each ... $35 50
Fig. 9607, with plain case, each ... 15 75

HEADLIGHT AND SIGNAL LAMP FOR FOREIGN LOCOMOTIVES.
ENGLISH TYPE

DESCRIPTION FIG. 9608.

Large quantities of these lamps have been exported within the last few years for the Japanese and Chinese trade.

Made with tiny lens or glass of semaphore or bull's eye lens.

FIG. 9608

PRICES, FIG. 9608

	Each.
5 in., with white semaphore lens and red and green slide.	$13 00
6 in., with white semaphore lens and red and green slide.	10 00
5 inch, with white bull's eye lens.	11 00
6 inch, with ruby bull's eye lens	13 50

THE FAIRBANKS COMPANY

LOCOMOTIVE TORCHES.

FIG. 9695.

FIG. 9696.

PRICES FIG. 9695

No. 1 tin 1 pint, height 14 inches, per dozen. $10.00

No. 1, brass, 1 pint, height 14 inches, per dozen 12.00

PRICES, FIG. 9696

No. 2, tin 1 pint, extra heavy, height 18 inches, per dozen . . $18.00

No. 3 brass 1 pint extra heavy height 20 inches, per dozen 24.00

BRASS TORCH BRACKET.

For Nos. 1 and 2 Torches, per dozen..... $15.00

F. G. 9697.

PRICES, FIG. 9697.

No. 3 tin 1 quart, height 16 inches, diameter of bottom 6 inches, per dozen . . $12.00

No. 3 brass, 1 quart, height 16 inches, diameter of bottom 6 inches per dozen 18.00

NEW STEEL RAILROAD TORCHES.

FIG. 9698.

Mounted with heavy brass fittings.

PRICES, FIG. 9698

½ pints, per dozen . $9.00

1 quarts, per dozen . 10.00

2 pints, per dozen . 1.70

3 quarts, per dozen 12.00

EVERLASTING BRAZED STEEL TOP BURNER TORCHES.

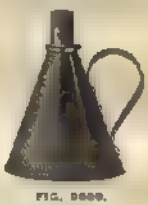


FIG. 9699.

FIG. 9700

PRICES FIG. 9699

No. 101 1 pint per dozen $8.00

No. 102 1 quart per dozen 10.00

PRICES, FIG. 9700.

No. 103 ½ pint per dozen $9.00

No. 104, 1 quart per dozen 10.00

HEAVY TIN INSPECTORS' AND LOCOMOTIVE TORCHES.

FIG. 9701, NO 43

PRICES F. G. 9701

Tin, per dozen . . $6.00

Tin, copper plated per dozen . . 9.00

4 inch bottom. Body to be seamed top and bottom. Made for hard usage.

STEEL BRAZED BOILER INSPECTORS' TORCH.

F. G. 9702

PRICE, FIG. 9702

No. 122, body 5 inches long 1½ inches high, 2½ inches wide per dozen . . $8.00

NOTE.—Burner furnished as shown or with spout as shown by dotted line. Any modification of design desired.

MINERS' LAMPS.

FIG. 9703.

DESCRIPTION FIG. 9703.

For kerosene or whale oil. Brass collar and breast in one piece. Spout and body in one piece, no seam to meet.

Spouts of four different sizes, Nos. 1, 2, 3 and 4. No. 1 is the smallest and No. 4 the largest spout. No. 3 is the size generally used. Bodies are all alike.

Hooks of three styles, single round, double round and single flat.

PRICES FIG. 9703.

With single round hooks, any size spout, per gross	$8 00
With double round hooks, any size spout per gross	10 00
With single flat hooks any size spout per gross	12 00

IMPERIAL MINERS' LAMP.

FIG. 9704.

DESCRIPTION, FIGS. 9704 AND 9705.

Made from first class tin only. These lamps are just the right size, large at the bottom so they will sit and balance well. Raised bottom, special spout giving improved draft, preventing tangling of wick, allowing free burning yet holding wick firmly at top of spout, preventing all waste.

PRICES, FIG. 9704.

Tin, per dozen	$2 20
Tin, per gross	21 00
Copper per dozen	3 00

PRICES FIG. 9705.
Single or double spout.

Tin, per dozen	$3 00
Tin, per gross	30 00
Copper, per dozen	6.00

Sent with double spout unless ordered otherwise.

IMPERIAL NO. 5 DRIVER LAMP.

FIG. 9705.

BRAIDED TORCH WICKING.

PRICES, FIG. 9706.

Braided wick for pyramid and broad top torches, per gross	$
Braided wick for engineers' torches, per gross	
Braided wick for No. A burner, per gross	
Braided wick for No. B burner, per gross	
Braided wick for No. C burner per gross	
Braided wick for No. D burner, per gross	
Torch wicking furnished in 16 lb. rolls, per lb.	
Torch wicking furnished in 50 lb. bales, per lb.	

FIG. 9706.

FIG. 9707.

LAMP TRIMMERS.

PRICE, FIG. 9707

No. 40, polished maroon handles, per dozen $1 40

THE FAIRBANKS COMPANY

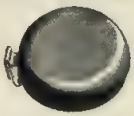
HOUSE BELLS ON CARRIAGES.

No. 204. Set Complete. Quarter Size Cuts.

No. **204.** Set Complete. Polished Brass Bell..... .Per Dozen $11 40
No. **211.** 6 Inch, Coppered Wire Check Springs..... .Per Gross 7 40

No 204, Half Dozen in a Box, No 211 One Dozen.

AUTOMATIC ALARM BELLS.



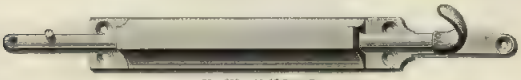
No. 2. One-Third Size Cut

Applicable to any door or window sash. The act of closing the door sets the operating mechanism, so that the instant the door is opened the alarm is sounded. The bell may be rendered silent when desired by the stop mechanism.

No. **2.** 3 Inch, Steel, Nickel Plated..... .Per Dozen $9 00

One in a Box

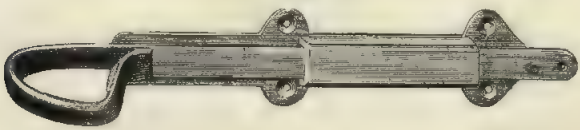
SLIDE BELL PULLS.



No. 218. Half Size Cut.

No. **218.** Small, Cast Brass..... .Per Dozen $ 5 00
No. **219.** Medium, Cast Brass..... " 7 00

One Dozen in a Box.



No. **3.** Heavy Cast Brass, Polished, 3¾ Inch Pull..... ..Per Dozen $12 00

Half Dozen in a Box

ALARM DOOR BELLS.

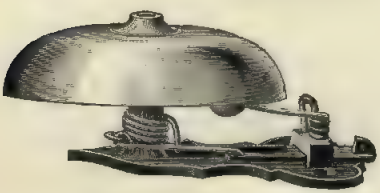
No. 133. Quarter Size Cut.

Nos. 125 and 135. Half Size Cut.

No. 133.	Polished Bell, Diameter at Mouth $2\frac{5}{8}$ Inches	Per Dozen	$ 8 00
No. 125.	Steel, Bronzed	"	5 00
No. 135.	Bell Metal, Polished	"	10 00

No. 133, Half Dozen in a Box; Others, One-Twelfth Dozen

GONG BELLS.



Nos. 20 and 30

No. 173.

House Gongs.

Inches	3	4	5	6
No. 20. Steel, Bronzed, Per Dozen	$4 00	5 00	7 00	10 00
No. 30. Bell Metal, Polished, "	8 00	10 00	14 00	20 00

Trip or Locomotive Gongs.

No. 173. Inches	3	4	5	6	8	10	12
Bell Metal, Polished, Per Dozen	$10 00	12 50	16 50	24 00	46 00	84 00	150 00

10 and 12 Inch have Lignum Vitæ Hammers.

One in a Box

BELLS.

Nos. 2 to 6.

LOOP TEAM BELLS.

Made from Wrought Steel. Uniform in Tone. Will not Crack. Cast Malleable Iron Loops Securely Riveted to the Bell.

The tongue is suspended from a portion of the loop that extends through the bell, making a very substantial arrangement, with no danger of the tongue working loose or dropping out.

		Per doz
No. 2.	Nickel Plated. 3⅜ inches diameter	**$1.84**
No. 1.	Nickel Plated. 2⅞ inches diameter	**1.34**
No. 6.	Nickel Plated. 2 7/16 inches diameter	**1.00**

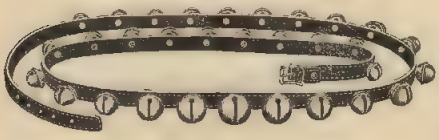
SLEIGH BELLS.

WROUGHT STEEL CHIMES.

Beaded Gong Shaft Chain
Made from Wrought Steel. Enameled Steel Strap

		Per pair
No. 869.	Rolled Brass Finish	**$0.70**

No. 869.



Nos. 639 to 641.

BODY STRAPS.

Rim Sleigh Bells. Assorted Sizes
Plain Black Harness Leather. Bells Riveted to Strap.
Common Tinned

			Per strap.
No. 639.	19 Bells, Nos.	8 2 2 2 2 2 1 0 1 2 3 4 5 6	**$1.90**
No. 640.	25 Bells, Nos.	10 6 2 2 2 2 1 0 1 2 3 4 5 6	**2.10**
No. 641.	31 Bells, Nos.	12 8 4 2 2 2 1 0 1 2 3 4 5 6	**2.30**

BODY STRAPS.

Polished Rim Sleigh Bells.
Assorted Sizes.
Wire Fastened, on Heavy Russet Harness Leather. Lined with Grain Leather

No. 45.	15 Bells.	Nos. 3 to 10	Per strap **$2.10**
No. 61.	19 Bells.	Nos. 4 to 13	" **3.80**
No. 72.	23 Bells.	Nos. 4 to 15	" **5.15**

"ARCTIC" SLEIGH BELLS.

Drop Forged from Wrought Steel.

Plain Black Harness Leather Straps.

Rolled Nickel Plated

No. 789.	30	1½ inch Bells	Per strap **$2.50**
No. 795.	36	1½ inch Bells	" **3.06**

Rolled Brass Plated.

No. 802	30	1½ inch Bells	Per strap **$2.50**
No. 832.	36	1½ inch Bells	" **3.06**

BELLS.

KENTUCKY COW BELLS.

Half size of No. 1½.

Nos.	0	1	1½	2
Height, inches (without loop)	7	6½	6	5¼
Per doz.	$12.00	10.00	9.00	8.00

Nos.	3	4	5	6	7
Height, inches (without loop)	4½	4	3½	3¼	2¾
Per doz	$6.00	5.00	4.00	3.00	2.50

CAST SHEEP BELLS—Strapped.

No. 169.
Strapped Brass Metal.

No. 2.	Strapped,	Per doz $3.50
No 3.	Strapped,	" 4.00

SWISS COW OR TEAM BELLS.

No. 167.

Not Tuned

No. 1.	3	inches diameter	Each $0.36
No. 2.	3 5/16	inches diameter	" .45
No. 3.	3 11/16	inches diameter	" .60
No. 4.	4	inches diameter	" .70
No. 05.	4¾	inches diameter	" 1.00
No 5	5	inches diameter	" 1.20
No. 06.	5⅝	inches diameter	" 1.80
No. 6.	6¼	inches diameter	" 2.00

BRASS OX BALLS.

No. 600.

No. 602.

No. 604.

Cuts are full size
Hollow Octagon. Heavy.
CAST BRASS.

No.	600	602	604
Diameter of Hole, inches	5/8x7/16	23/32x15/32	11/16x13/32
Per gross	$13.50	18.00	21.00

TURNING THEM OUT

—not by the mile, nor by the hundred—but one at a time—three times a week. That is how uniformly high-grade construction is assured in The LOZIER Motor Cars. And each car is perfect or it would not be turned out—it would be turned down. We spent nineteen months in the most thoroughly exhaustive experimenting before we completed our first car, which appeared in August, 1904, and added to our sum of knowledge for ten months more before our first delivery was made—in June, 1905; and we felt then, as others are realizing now, that our tireless efforts to produce the very best before it was given to the public had landed us at the first jump right at the top, with a car that is so vastly superior to any other American make, and so certainly the equal of the best of the foreign product, that, with a few other American manufacturers following the LOZIER lead, the day of the foreign motor car in the American market will soon be over. Too great haste in building, and an overmastering desire for quick returns and large profits, have not given American workmanship a chance to assert its superiority. We were in no haste to announce The LOZIER Motor Cars, nor are we in a hurry about turning them out—we are not slow by any means, we are merely sure—for The LOZIER kind of high-grade construction demands time and care. We have said that LOZIER Motor Cars are equal to the best of the foreign product—we might go further and assert that they are better—for if they are equal to them in every other point and superior to them in at least one, it follows that The LOZIER Motor Cars are the best in the world—and in the hardened and ground crank-shaft (turned, hardened and ground on its own centers), we claim a superior point in correct construction that is not to be found in any other car—foreign or domestic. We have other points besides. In price, our Limousines, Landaulets and Touring Cars are comparatively high—and they ought to be; for they cost money to build—as we build them—and good construction is everything. Call and see them at our New Building, 58th Street and Broadway, New York City, and at the Automobile Show, Sixty-ninth Regiment Armory, January 18th to 26th, 1906.

LOZIER

THE LOZIER MOTOR CO.

MAJESTIC

Automobile Specialties are the Best and Cheapest

Majestic Detachable
Clincher Tires
Right in Construction
Right in Price
and with a
Right Guarantee

Majestic 3 Tube Horns, Brass Throughout, Accurately Toned and Our Prices will Surprise You.

Majestic Search-Lights
Brass and Copper in All Sizes

Majestic "Alpha" Pattern
Most Handsome Lamp Ever Designed

MAJESTIC BULLETS
Side Lamps

Majestic Single Tube Tires
Cannot be Excelled, Prices the Lowest

Majestic Generators
Simple and Perfect

MAJESTIC MARINE SEARCH-LIGHTS

Bicycles and Sundries

We have bargains in this department, which is worth your while to investigate.

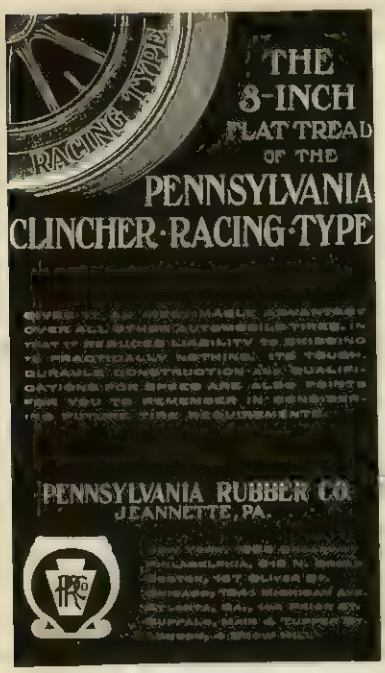
GET OUR CATALOGUES.

MANHATTAN STORAGE CO.

42 and 44 CORTLANDT STREET NEW YORK

We will exhibit at following Auto Shows:

NEW YORK,	Madison Square Garden,	January 13th to 20th,	Space 203
CHICAGO,	Coliseum, -	February 3rd to 10th,	" 269-270
BOSTON,	- Mechanics' Hall, -	March 10th to 17th,	" 131-132



WE are the oldest established Automobile Lamp Makers in America and one of the largest.

Our output has been taken by exclusive sales agents and marketed under their own names.

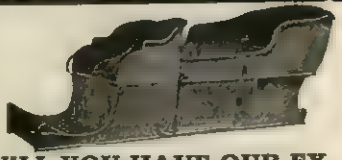
Now we offer our **"Saxon"** line to the general trade—as the best lamps our extensive experience enables us to design—as made of good materials and to be sold at the right prices.

Catalogue Sent on Application

Manhattan Lamp Works

526-32 W. 28 Street. New York City

7 YEARS EXPERIENCE IS quite a slice in the manufacture of automobile chassis, bodies and parts. It indicates success and progress.



WILL YOU HAVE OUR EXPERIENCE, or the experiments of others? Get our new catalogue of chassis, bodies, wheels, axles, steering devices, sprockets, etc.

BORBEIN AUTO CO.,
2109-11 N. 9th St., St. Louis, Mo.

SAVING **Speed** SAFETY

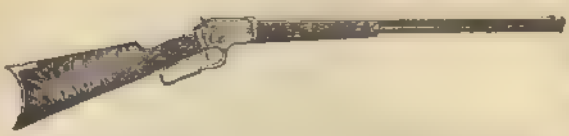
Our gas generating tank makes a 40 H. P. car of any ordinary 24 H. P. car—puts it in the mile-a-minute class and then drives the car on half the quantity of gasoline formerly used. Besides it absolutely prevents danger from fire or explosion. The cost? Less than a new set of tires.

¶ *We will prove it* if you will write us for free descriptive booklet.

THE AMERICAN GENERATOR CO.
N. E. Corner 63rd St. and Park Avenue, New York City

MARLIN RIFLES

Marlin Model 1892 Safety Repeating Rifle

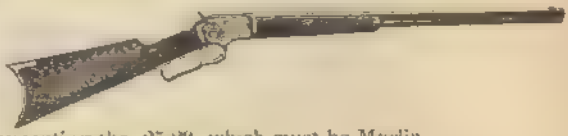


The side plate can be removed, the parts lifted out, cleaned and replaced in less than a minute.

This rifle takes the following cartridges: .22 short, .22 long rifle, .22 short, .32 long, .32 short, .32 long rifle rim fire, .32 short Colt's, .32 long rifle, .32 long Colt's, centre fire.

	24-inch
Rifle with round barrel	List $29.00 each
Rifle with octagon or ½ octagon barrel ..	" 31.50 "

Marlin Model 1894 Safety Repeating Rifle



All 1894 models have case-hardened frames.

Using the .25-20, .32-20, .38-40 and 44-40 Marlin Solid Cartridges. Cartridges made for Colt Lightning and Winchester Rifles can be used, excepting the .25-20, which must be Marlin.

	24-inch
Rifle with round barrel	$27.50 each
Rifle with octagon or ½ octagon barrel	30.00 "

Model 1894 Half Magazine Baby Carbines

We can furnish .38-40 or 44-40, 20-inch [illegible] special light weight, [illegible] pounds, with half magazines holding six cartridges, at same price as regular Model 1894 Carbines.

Baby Carbine, half magazine, 20-inch, round barrel, 6 shots, 5 1-2 pounds.

Price .. $27 00 each

Marlin Repeating Rifles, Model 1893 Grade "B"

Rifles of this grade are made in .32-40 or .38-55 sizes only. They are in every respect the same as the regular Model 1893, except that the barrels are made of the highest grade of soft gun barrel steel, known as our "special smokeless steel." These rifles are suitable for use with black powder and the [illegible] equivalent, such as Lesmok Power smokeless, and are made to meet the wants of the many shooters who do not care enough for the Strictly Steel Barrel to pay the extra price. We do not recommend this grade for High Power Smokeless ammunition.

Grade "B" rifles will be marked on the barrel "For Black Powder." Regular Model rifles are marked on the barrel "Special Smokeless Steel."

	.32-40 or .38-55
Rifle with 26-inch, round barrel, 10 shots, 7 lbs. Price .	$27.50 each
Rifle with 26-inch, octagon barrel, 10 shots, 7 1-2 lbs. Price	30.00 "

See Terms page 3, and Discount sheet next back cover.

MARLIN RIFLES

Marlin Safety Rifle, Model 1893

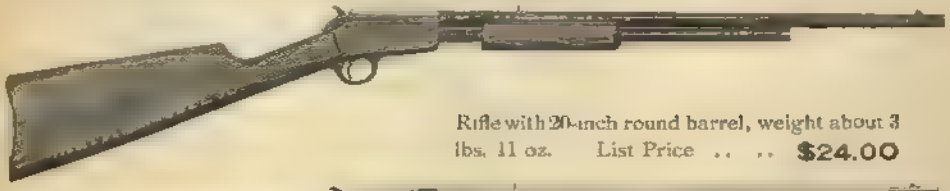
All High Power Smokeless Material. 25-36, .30-30, .32 special, .32-40 and .38-55 Calibre. These rifles are all made with smokeless steel barrels. For deer or smaller game, we recommend this model above any on the market. The standard length of barrel is 20 inches, and a rifle with octagon barrel of this length will weigh about 7¼ pounds.

	24 inch
Rifle with round barrel	**$35.00 each**
Rifle with octagon or ½ octagon barrel	**36.00 "**

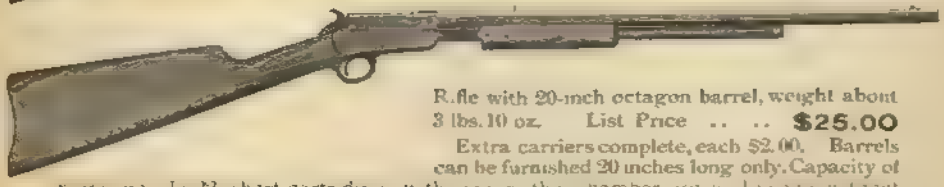
The Marlin Baby Repeating Rifle

This rifle is designed to do every thing that is necessary in a .22 repeater, to be of the very best quality, and to sell at the lowest price possible. The boring, rifling, chambering and inside barrel finish are all up to the old Ballard standard as made by us for over forty years. The inside barrel finish you can see for yourself, and we will be glad to have you compare it with that of any other rifle made at any price.

The Frames are drop forged from best quality open-hearth gun frame steel. The Buttstocks and Forearms are all made of black walnut.



Rifle with 20-inch round barrel, weight about 3 lbs. 11 oz. List Price **$24.00**



Rifle with 20-inch octagon barrel, weight about 3 lbs. 10 oz. List Price **$25.00**

Extra carriers complete, each $2.00. Barrels can be furnished 20 inches long only. Capacity of magazine 14-22 short cartridges, with one in the chamber, gives 15 shots without reloading. Frames are blued.

Hopkins & Allen Junior Repeating Rifle

Shoots 22 Short, 22 Long or 22 long rifle cartridge. The magazine will hold 16, 22 short cartridges or 12 long or long rifle and 10 magazine will hold either of these cartridges and they can be put in promiscuously. TAKE DOWN PATTERN. Selected walnut stock, military style and military butt plate, Rocky Mountain rear sight and gun metal front sight. Positive safety device to trigger so that the rifle cannot be fired until the lever is thrown. Length of barrel 20 inch. Weight 5 1/2 lbs. Length over all 38 1/2 inch.

Can be used as a single shot rifle as well as a repeater. Rifling of our improved increased twist, parts all drop forged, and lock work made of spring steel.

Price **$18.00**

We will Exhibit in Madison Square Garden Automobile Show, January 13-20.
Space No. 39.

The "Matheson" touring car is designed to compete principally with the very finest and highest priced cars of foreign make. Its exceptional qualities and superior operation can only be fully appreciated by *actual comparison* with others, *part for part*, and by *actual long-distance road demonstration*. It is, without any exception, far and away the most thoroughly mechanical, the strongest built, the most powerful, the fastest, the handsomest and the most completely equipped car on the market to-day.

CHARACTERISTIC FEATURES:

Self-starting from the seat.
Make-and-break ignition with magneto
Four-cylinder vertical engine.
All valves in the head mechanically operated.
Valves never require regrinding.
All valve-actuating mechanism, on top of engine quickly accessible.
Absence of Vibration.
Noiseless in operation.
Automatic, wide-range, multiple-spray carburetor; will stay adjusted and vaporize any grade of gasoline.
Automatic speed control by governor.
Automatic lubrication, multiple, positive force feed.
Clutch, multiple-disc, metal to metal. Will run thousands of miles without adjusting.
Sliding-gear transmission, chrome nickel steel.
Hess-Bright (imported) ball bearings on transmission shafts, differential shafts, steering knuckles, and in clutch actuating mechanism.
Roller bearings on all wheels.
Extra large bearings throughout, insuring long life.
Double Chain drive.
Four especially powerful brakes.
Hill-pawl prevents car backing down grade.
Irreversible steering gear.
Axles, special nickel-steel forgings, I-beam pattern.
Nickel-steel frame, cold rolled pressed.
Flexible reciprocating rotary spring suspension, eliminating all torsional strains on front and rear springs.
Radiator, honeycomb type.
Gasoline tank, capacity 20 gallons.
Long half-elliptic springs, front and rear.
Aluminum pan underneath car.
Tires, 36x4 inches front; 36 x4½ inches rear.
Wheel base, 40-45 H. P., 112 inches. 60-65 H. P., 118 inches.
Side-entrance aluminum bodies, superbly finished; the unparalleled production of J. M. Quimby & Co. and Moore-Munger Co., luxuriously upholstered.
Weight, 40-45 H. P., 2,980 lbs.
60-65 H. P., 3,160 lbs.
Speed, guaranteed; 40-45 H. P., 60 miles per hour. 60-65 H. P., 70 miles per hour. Geared for greater speed if desired.

"America's Finest Motor Car"
One Year Guarantee
Mathe
40-45 H. P. $6,000 60-65 H. P. $7,600
With Complete Equipment Below

Our Complete Equipment Consists of

Cape-Carle top,
Stern curtains,
Sliding glass front,
Detachable folding seats, with tan backs,
Foot cushions,
Mats front and rear,
Large leather wallet,
Toilet set of comb, brush mirror, whisk broom and clothes brush,
Pocket cyclometer,
Folding baggage rack,
Tire irons for carrying extra tires at side of car,
Tire covers, waterproof,
Coat rail,
Kruse-Hartford shock absorbers,
Acetylene generator on car tank,
Acetylene gas lights, oil side lamps, tail lamp,
Large dragon horn,
Gabriel horn,
Gasoline gauge,
Speedometer,
Reserve tank lubricating oil,
Jesse Colonator-Speedometer,
Complete set tools and tire repair outfit,
Water-gauge,
Dashboard 8-day clock,
Monogram on doors,
Extra parts.

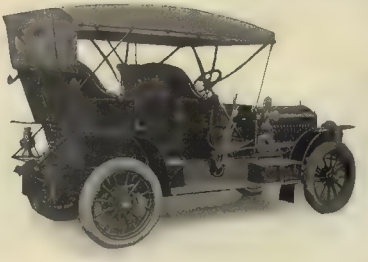
Complete catalogue giving full details mailed upon request.

MATHESON MOTOR CAR CO. - - WILKES-BARRE, PA.
(Formerly Holyoke, Mass.
Member Association Licensed Automobile Manufacturers.

N. B.—Our new factory is one of the largest and most modern in the world.

FRAYER-MILLER

The Sensational Car of 1905



Properly Cooled By Air

First American Six-Cylinder Car

An **Unqualified** Success. Will be seen at the Armory Show, New York.

TWO MODELS

Four Cylinder, 24 H. P., 2,000 lbs., $3,000. Six Cylinder, 40 H. P., 2,500 lbs., Cylinders, both cars, 4⅞ x 5½ inches.

RECORDS

3202 Miles in 6 days, 15 hours, 20 minutes. 1866 miles without a stop.

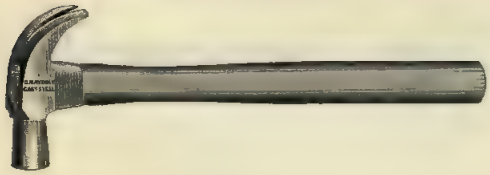
UNBEATEN.

Oscar Lear Automobile Company, Columbus, O.

Frayer-Miller Automobile Co., 941 8th Ave., New York

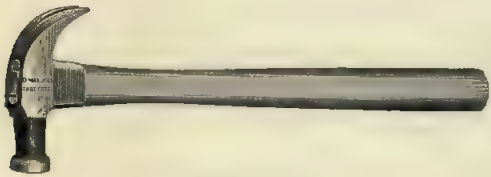
MAYDOLE'S NAIL HAMMERS.

Solid Crucible Cast Steel.



Adze Eye.

Numbers	1	1½	2	3
Weight, Ounces	20	16	18	7
Per Dozen	$8 75	8 00	7 50	6 75

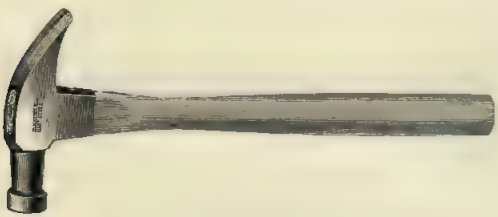


Adze Eye, Bell Face.

Numbers	11	11½	12	13
Weight, Ounces	19	16	12	7
Per Dozen	$8 75	8 00	7 50	6 75

Adze Eye, Bell Face. Nickel Plated. Ebonized Handles.

No. **611½.** Weight **16** Ounces ..... Per Dozen $12 75



Adze Eye, Straight Claw, Bell Face.

Numbers	711	711½	712
Weight, Ounces	19	16	12
Per Dozen	$8 75	8 00	7 50

All Above, Half Dozen in a Box
Weights Do Not Include Handles

RIVETING HAMMERS.

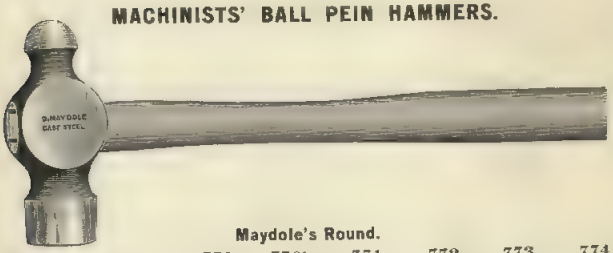
V. & B. Eagle Brand.

High Polished and Temper Blued.

Numbers	0	1	2	3	4
Weight	4 oz	7 oz	9 oz	12 oz	15 oz
Per Dozen	$5 50	5 75	6 00	6 25	6 50

Half Dozen in a Box

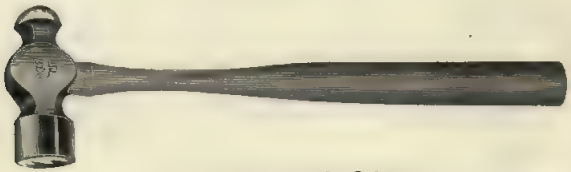
MACHINISTS' BALL PEIN HAMMERS.



Maydole's Round.

Numbers	770	770½	771	772	773	774
Weight	3 lb	2 lb 4 oz	1 lb 14 oz	1 lb 8 oz	1 lb 4 oz	1 lb
Per Dozen	$20 00	17 00	15 00	13 50	12 25	11 25
Number	775	776	777	778	779	
Weight.	18 oz	10 oz	7 oz	5 oz	3 oz	
Per Dozen	$10 50	10 00	9 50	9 25	9 00	

One Third Dozen in a Box.



V. & B. Eagle Brand. Octagon.

Numbers	0000	000	00	0	1
Weight	6 oz	8 oz	12 oz	1 lb	1 lb 4 oz
Per Dozen	$12 00	12 00	12 00	12 50	13 50

Numbers	2	3	4	5	6
Weight	1 lb 8 oz	1 lb 12 oz	2 lbs	2 lbs 4 oz	2 lbs 8 oz
Per Dozen	$14 50	15 50	16 50	17 50	19 00

No. 6 One Third, others Half Dozen in a Box.
Weights Do Not Include Handles.

BEST HUBS MADE

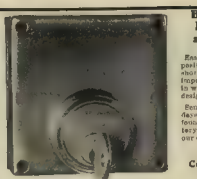
Thousands of Jobbers Dealers, Manufacturers and Riders say so too.

E. T. HARRIS

531-545 West 15th St., Chicago

Harris Adjustable Repair Cones, Hexagon Nuts and Axles; Bulky Hubs, Motor Cycle Front Hubs, B. B. Attachments, etc., etc.

All goods Jobbers handle



B. & J. Lock-switch

Easy to connect, positive contact, short circuiting impossible. Light in weight, neat in design.

Sent on thirty days' trial. If not found satisfactory, return at our expense.

Price, Complete, $5 00

B. & J. Mfg. Co.

1218 Michigan Ave., Chicago, Ill.

ERIE 2 H P. MOTORCYCLES

Also unfinished sets furnished for building your own motorcycle from special frame or bicycle.

2-3-5 H. P. CYCLEMOTORS

Complete or castings.

Send for catalogue of parts wanted.

THE MOTORCYCLE EQUIPMENT AND SUPPLY CO.

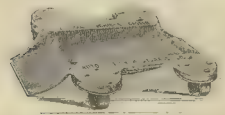
934 MAIN ST., BUFFALO, N. Y.

MAYO Chain Drive

Also a complete line of sprockets, rims, tires, etc. MAYO motors and hose connections. Manufacturers supplied. Your delay to secure this line will be your loss. Are booking agents for 1906 now.

MAYO DAMPER CO., Pottstown, Pa.

NORWOOD VEHICLE DASHER OR PORTABLE TURNTABLE FOR AUTOMOBILES



Handiest cars than the Washout, at most limited spaces. Made in one solid casting. Always ready. Nothing to get out of order. Wheels can be run on or off from either end. A time saver. Price, $6.00 each. Agents wanted.

A UTO SUPPLY & STORAGE CO.

1416 MADISON AVE., BALTIMORE, MD.

A. & J. Specialties

Repair Hangers

We originated the repair hanger. Insist on getting the genuine A. & J.

Motor Cycle Hangers

With special bracket for drop frame for large motor.

Order from your Jobber or direct from us.

Braziron

For brazing cast iron: send 10 2-cent stamps for trial package sufficient for a number of jobs.

THE A. & J. MANUFACTURING CO.

26 W. Randolph St., Chicago, Ill.

Our Newest Model, One Size Extension 10 to 12 In.

AUTOMOBILE CYCLE SKATE

Ball-bearings, 5 in. Rubber-Tired Wheels, Metal Parts, Sheet Steel, Nickel Plated. Retail $10.00; with 4 Ir. Wheel, $7.50 per pair. They appeal to both young and old, being especially adapted for outdoor use as well as in Armories and Rinks. Write for Catalogue. Special discount to the trade.

CYCLE SKATE AND SPORTING GOODS CO.

37 Park Street, New York

ALL ROADS ARE EASY WHEN THE STAR

BALL RETAINER

Is Used

With millions in daily use, it has stood the test for more than five years, and is adaptable to ball bearings of any kind. If you are users of ball bearings, we would be pleased to hear from you and mail you our catalog with the latest information, which we know would be profitable and interesting to you.

THE STAR BALL RETAINER CO., LANCASTER, PA., U. S. A.

SOLID JAW STEEL BAR VISES.

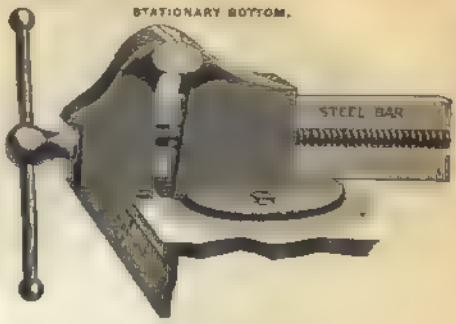
PRICES, FIG. 6626

STATIONARY BOTTOM

No.	Width of Jaws Inches.	Jaws Open Inches.	Weight, Lbs.	Each
46	3½	5½	57	$7 00
45	4½	6	67	9 00
44	4½	7	72	10 50
44	5	8	88	13 50
45	5½	9	98	15 00
47	6	8½	110	20 00
48	6½	8½	115	21 00
53	8	10	160	30 00

SWIVEL BOTTOM

53	3½	5½	46½	$ 5 50
54	4½	6	64½	11 00
55	4½	7	85	15 50
57	5	8	90	17 75
58	5½	8	100	20 00
59	6	9½	1.83½	25 00
60	6½	9½	120	28 00
65	8	10	160	35 00



STATIONARY BOTTOM.

FIG. 6625.

FIG. 6627

SHEPARD NEW STEEL BAR STATIONARY VISES.

DESCRIPTION FIG. 6627

Can be used as either stationary or swivel bottom Vises. Each Vise is equipped with one bolt nut and washer for fastening to bench. Is also provided with both horizontal and vertical holes to bench.

PRICES, FIG. 6627

No	152	160	161	161½	169	183	64
Jaws, inches	2	2	3½	6	8½	4	4½
Open, inches	2	2	3	3½	4	4	7½
Weight, lbs.	3½	4	10	12	14	30	44
Each	$0 75	$ 50	$0 90	$2 50	$3 75	$4 00	$6 00

SHEPARD NEW STEEL BAR SWIVEL VISES.

DESCRIPTION FIG. 6628

Handy swivel bottom, all on top of work bench. Wrought steel sliding bars, screws, levers and jaws. Handsomely polished and

PRICES, FIG. 6628

No.	139	60	6	61½	62	63	64
Jaws, inches	3	3	4½	5	6½	4	4½
Opens, inches	3	3	3	3½	4	6	7½
Weight, lbs.	6	35½	12	18	30	25	38
Each	$1 00	$1 25	$0 25	$2 25	$3 00	$4 50	$6 75

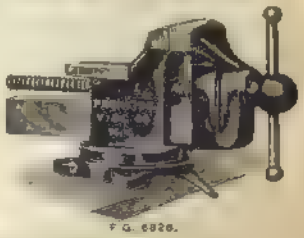


FIG. 6628.

NEW STEEL BAR FILERS' VISES.

STATIONARY BOTTOM.

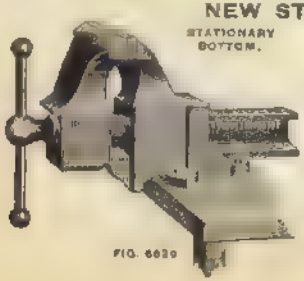


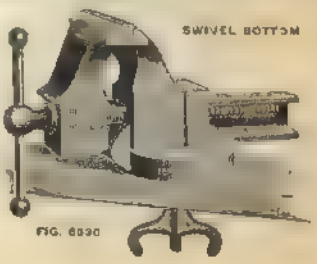
FIG. 6629

PRICE FIG. 6629

No. 48, 4 inch jaws, open 6 inches, weight 37 lbs. each $7 00

PRICE, FIG. 6630.

No. 49, 4 inch jaws, opens 8 inches, weight, 45 lbs. each $9 00



SWIVEL BOTTOM

FIG. 6630

FILERS' OR FINISHERS' VISES.

SELF ADJUSTING JAWS.

SWIVEL BOTTOM.

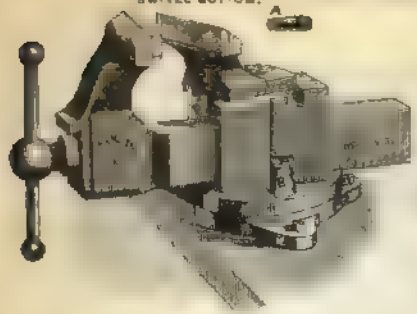


FIG. 6831.

PRICE FIG. 6831.

No.	47
Length of jaws, inches	4½
Jaws open, inches	3½
Weight, lbs.	47
Each	$ 8 00

STATIONARY BOTTOM.

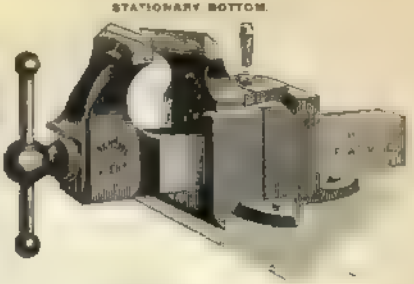


FIG. 6832.

PRICE FIG. 6832

No.	48
Length of jaws, inches	4½
Jaws open, inches	3½
Weight, lbs.	48
Each	$8 00

VICTOR SEMI STEEL FILERS' VISES.

STATIONARY BOTTOM.

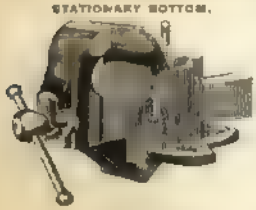


FIG. 6833

With swivel jaw giving instant adjustment to wedge shaped pieces

PRICE FIG. 6833

No.	578
Length of jaws, inches	4½
Jaws open, inches	3½
Weight, lbs.	48
Each	$8 00

PRICE, FIG. 6834.

No.	578
Length of jaws, inches	4½
Jaws open, inches	3½
Weight, lbs.	48
Each	$10 00

SWIVEL BOTTOM

FIG. 6834.

COACHMAKERS' OR WOODWORKERS' VISES.

SWIVEL BOTTOM.

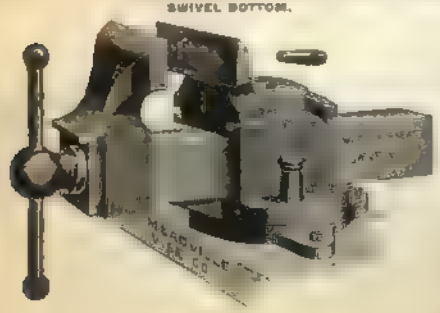


FIG. 6836

PRICES, FIG. 6836

SWIVEL BOTTOM

No.	11	12
Width of jaws, inches	3½	4
Jaws open, inches	7	9½
Weight, lbs.	54	67
Each	$9 50	$12.00

STATIONARY BOTTOM

No.	11½	12½
Width of jaws, inches	3½	4½
Jaws open, inches	7	9½
Weight, lbs.	39	50
Each	$8 00	$11 00

QUICK SELLING PROFIT PAYING

DOLL SUNDRIES

The needs of every retail doll department. Goods that will sell in any store if shown... We have a good line and the prices are right.

DOLLS' HEADWEAR.

F926—Fine flannel lawn cap, net edge to string. 1 doz. assrt. patterns in box. Doz. 28c

F937—Assrt. pique sailor and poke bonnet, frilled lawn edging. 1 doz. in box, assrt. colors, sizes and shapes. Doz. 41c

F926—Cap asst., figured lawn tops, and tatted net with, entwined ribbon strings. 1 doz. in box, assrt. colors. Doz. 79c

F100, Child's Delight" sun bonnet, assrt. colors and with ruffled edge, name as a regular sunbonnet, strings. Best print, blue, yellow, etc. 1 doz. in box, assrt. ... Doz. 85c

F939—Good ... assrt. lace and ... edgings, 4 doz. in box, assrt. sizes and colors ... Doz. $1 82

DOLLS' LEATHER SLIPPERS.

1 doz. pairs in box, assrt. sizes.

F 405 and F416. F401, 45c Doz.

F 2455—Bronze and/or nickel buckle, bow ... sizes 5 to 8 ... Doz. 40c

F 2456—... 43c

F2457—Assrt. 2 sizes, 11 black ... ribbon bow, nickel buckles, ... leather silk cord, nickel buckles ... Doz. 78c

F ... ... dressy ... with rosettes ... ribbons and ... laces, ... leatherings, light blue, pink and red ... Doz. 80c

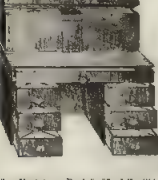
F2459—Black patent leather, silk cord string with bow and ... a pompon, ... high to blend and pink ... Doz. 89c

DOLLS' MOCCASINS.

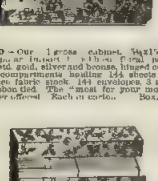
F925—... ... ...

FANCY BOX PAPER Continued.

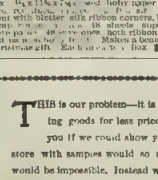
82342 Roya ... 11x9x3¼, extra large flat blotter cover box, silver or gold embossed over paper, dainty pink and green floral decorated, inside of cover lined sides and ends. Part for Longest study, 4 compartments holding 48 sheets best plated linen cloth stock, 48 wallet flap envelopes, all wide pink satin ribbon tied. Can be used as glove and handkerchief box. Each in carton.
Box, $1.38



82343 Minute Desk," 8¾x13¾x9¾, mahogany finished 3 compartment ... inches ... pocket ... drawer ... for pens, pencils ... Fine white ... 72 sheets ... 72 envelopes to match, ribbon tied to each. Each in carton.
Box, $1.38

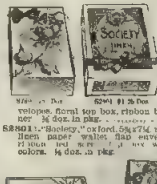


82340 Our 1 gross cabinet, 12x11¾x3¾ ... paper, ... gold, silver and bronze, hinged cover 6 compartments holding 144 sheets fine linen fabric stock, 144 envelopes, 3 sizes, ribbon tied. The "must for money" ever offered. Each in carton.
Box, 95c



82341 Gladstone combination writing desk box, 11¾x8¾x4, ... holly paper ... pocket ... 72 sheets ... 72 envelopes, all wide pink satin ribbon tied. Can be used as glove and handkerchief box. Each in carton.
Box, $1.38

SPECIAL LINE OF HOLIDAY BOX PAPERS.



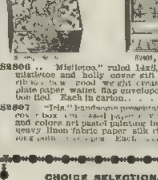
82900 ... "American Beauties" ... 24 sheets ... 24 envelopes, floral top box, ribbon bow on cover ... doz. in pkg. ... Box, 78c

82901 "Shirley," ... 24x7¼, ruled, cream linen paper wallet flap envelopes silk ribbon tied ... colors. ... Box $1.25

82902 ... "Gibson Girl" unruled, 7¾x9¾ silk ribbon decorated water color top gift box, 24 sheets plate finish cream wove paper, wallet flap envelopes, silk ribbon tied. Each in carton. ..... Box 15c

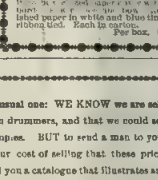
82903 ... "Art Fairies" unruled, tandem shape box, white wove paper, wallet flap envelopes, silk ribbon tied ... top in colors, two silk ribbon bows. Each in carton. ..... Box, 16c

82904 "Floral Top," ... 11x9¾, tele... gift box, cream ... wallet flap envelopes, silk ribbon tied. Each in carton. Box 17c



82906 ... Mistletoe," ruled 14x9, embossed mistletoe and holly cover gift box, white ribbon bow, good weight cream wove ... plate paper wallet flap envelopes, silk ribbon tied. Each in carton. ..... Box 39c

82907 "Iris," handsome presentation hinged cover box ... 24 sheets ... 24 envelopes, gold and colors ... pasted ... inside cover, heavy linen fabric paper silk ribbon tied ... Each ... Box 30c



82908 "Chrysanthemum Girl," unruled, 14x10¾, ... 24 sheets ... 24 envelopes to match, ... box, gold ... ribbon tied. Each in carton.
Per box, **43c**

CHOICE SELECTION.

Will pay a nice profit

SPECIAL LINE OF HOLIDAY BOX PAPERS.

82909 ... Pussywillow," 8¼x7¾, hinged cover box ... 24 sheets ... 24 envelopes to match, gold and satin ribbon bow ... paper and ... Each in carton. ..... Box 48c

82910, "Poppies," 6¾x10¾, mailed, attractive cabinet box, embossed red and green watercolor cover, cream finish paper, wallet flap envelopes. Each in carton.....Box, 54c

82911, "Holly," unruled, 10¾x6¾, hinged cover box, embossed paper ... with silk ribbon and holly ... satin finish cream wove paper, ripple bond paper, wallet flap envelopes, silk ribbon tied. Each in carton. ..... Box, 53c

82913, 65c Box.

82913, "Princess," unruled 11¾x7, handsome satin cover gift box, medallion center, gold trimmings, silk ribbon tied, good weight, fancy finish paper, wallet flap envelopes, silk ribbon tied. Each in carton. Box, 65c

82813, "Brochure," unruled, 13¾x7¾, hand some embossed paper cover, ... brochure, gold border, medallion center in colors and gold, linen finish paper, wallet flap envelopes, silk ribbon tied. Each in carton. Box, 69c

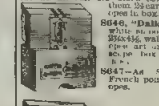
Asst. Holiday Box Paper.

Made up for those who desire an assortment of holiday box papers without having to buy a great amount.

82814 Asst., consists of our stock of 82800 to 82813, inclusive, total 14 boxes in case. No charge for case. Asst. $4.90

All of the foregoing Fancy Box Papers are subject to Special Holiday Terms as stated on first pink page.

CORRESPONDENCE CARDS.



For short notes and invitations. 24 cards and 24 envelopes, 6 boxes in pkg., no fold.

83115 Heavy cream smooth ... sheet 3¾x5, wallet envelopes to match. Price ... box, top design.
Box, $1.20

83116 Heavy cream ... fold 3¾x5, wallet envelopes to match. Price ... box, colored top. ..... Box, $1.55

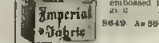
CORRESPONDENCE CARDS AND ENVELOPES.

Just the thing for short notes, engagements, invitations, etc. No stock complete without them. 24 cards and 24 envelopes in box, 6 boxes in pkg.

8646, "Dalkeith"—Heavy white ... finish card, 3¾x4¾, wallet flap envelopes, all ... paper ... Box 95c

8647—As 8646 ... 4¾x4¾, French pointed flap envelopes. Box, $1.15

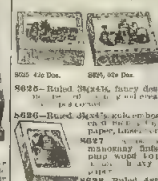
8648, "Imperial Fabric"—Finest linen fabric card, 3¾x4¾, wallet flap envelopes, white embossed paper covered telescope box, embossed title in red and ... Doz. $1.92



8649 As 8648 ... Doz. $2.25

JUVENILE BOX PAPER.

The styles that please the children. 6 in pkg



8625, 42c Box. 8626, 62c Box. 8627, 72c Box.

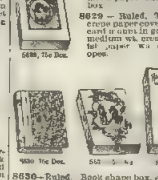
8625—Ruled ... fancy design ... box, ... paper, ... Doz 42c

8626—Ruled ... box, ... paper, ... Doz 62c

8627 ... box, ... mahogany finish box, ... cover ... Doz 72c

8628—Ruled, ... box, ... Doz 72c

8629 — Ruled, ... tinted ... paper-covered box, ... card ... in gold and colors, ... Doz 72c



8630, 75c Box. 8631, 75c Box. 8632, 75c Box.

8630—Ruled ... paper-lined gold cover, ... Doz 75c

8631—Ruled, ... Doz 75c

8632 ... Ruled ... Doz 75c

8633, 84c Box. 8634, $1.00 Box.

8633—Cheltenham ... tinted, ... paper, ... Doz. 84c

8634 ... Gold ... hinged cabinet box, drawer ... paper, ... cover. Doz $1.00

8640—Upright piano, ... finish heavy cardboard, ... keys, gold and silver ... 24 envelopes, ... Each in carton. Doz. $2.65

8634 Boxed ... Gold ... hinged cabinet box, drawer ... paper, ... cover. Doz $1.00

OUR "HELLO CENTRAL" JUVENILE BOX PAPER.

First appearance on the market. Goods of this character are always sold at ... prices.

8635 ... lation wall ... paper, ... Per dozen **95c**

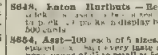
VISITING CARDS.

Clear white stock 50 in pack 1 doz. packs in ... Box $0 65

8651, Asst.—Plain ... Box 72

8652, Asst.—Fine ... Box 75

Contains 5 packs of 50 (450 cards), from 2¾x1¾ to 3¾x2¾. ... Complete 30



8648, Eaton Hurlburts — Regulation ... in pack ... display box ... 72

8654, Asst.—100 ... 5 sizes. 500 ... placed ... very large ... and ... poses, ... Box 75

ENVELOPES FOR VISITING CARDS.

Fine smooth finish ... stock, good ... wove pointed flap. ... in box

8640—1¾x2¾	Box	35
8641—2¼x3¼		35
8642—2¾x3¾		35
8643—3¼x4¼		36

THIS is our problem—it is not a usual one: WE KNOW we are selling goods for less prices than drummers, and that we could sell you if we could show you samples. BUT to send a man to your store with samples would so raise our cost of selling that these prices would be impossible. Instead we send you a catalogue that illustrates and describes its goods and names NET WHOLESALE PRICES. Are you not willing to meet us half way by ordering a few sample dozens for the most satisfactory of all tests—COMPARISON IN YOUR OWN STORE!

WRITING PAPERS.

Full weight, uniform quality, nicely put up. These well known fine tints, brands are a guaranty of honest quantities at honest prices. *Order a sample package and compare.*

S8230 "B. B." - Lot-ruled stock, 5 lb wt., fine quality ruled. 1 quire in a box. Box 42c

1 LB. (16 OZ.) PAPERS AND ENVELOPES TO MATCH.

Papers.

S843, "Our Perfection"--Heavy cream wove ruled paper texture, good quality, neat wrapper title gold embossed . . . Lb. 7c

S243, "Medallion"--St. James, super calendered cream rag paper, ruled 120 sheets, superfinish surface, pica, has embossed top in gold and colors. 5 1-lb. pkg. in pkg.. Lb. 8c

"Fabric Finish"--Cloth finish ruled stock, superior quality, royal size, ruled averaging stock 108 sheets to 16 1-lb. in neat pkg. wrapped correspondingly with stock.
S240--White . . . . . Lb $0.17
S8242--Quaker gray" . . . . . " .17

Envelopes.

S244, "Our Perfection"--Baronial or square to match S262. ¼ M in box.. Per M, $1.10

S245, St. James--Wallet flap to match S243. ¼ M in box. . . . . Per M, $1.50

Fabric finish--wallet flap. To match above, ¼ M in box.
S3001--White . . . . . Box $0.30
S3004--Amer. . . . . " .30
S3005--Quaker gray. . . . . " .30

We ask no favors. In any line all we ask is COMPARISON. We make no claims that we are not willing to have settled by the test of RESULTS.

TYPEWRITER AND LETTER HEAD PAPERS.

For general business correspondence. 500 8x10½ sheets in box

S8743--Light wt., cream laid water mark, 17 lb. Scotia Lynene."
S8748 Good wt. cream laid linen. Box, 55c

Box 42c

TYPEWRITER RIBBONS.

Fully guaranteed. Full length, will not dry out or "set up." All narrow ribbon on spools. We use the following inaction on all one specified. Send no. Smith Premier Oliver and Underwood. Purple copy blue copy black copy, green copy and indelible ribbon. Purple, blue and black record, black record, and green copy. Say color of record. Each in a box (in case of 1 doz., $4.00)..... Spool 35c

LONG WEARING SEMI-CARBON PAPER.

S3795, Black--6x13, for typewriter stylus pen or pencil. For tracing designs, manifolding and duplicating. 100 sheets in carton, no less sold . . . . Carton, 75c

S8732, Purple Sixth. As S8795. . . . 72c

ENVELOPES.

Standard goods at less than standard prices. Sizes and weights both are standard. Why pay more?

Note X XX and XXX denote weight of sheets from which envelopes are made. X is 4th lb. XX 50th. XXX 60 lb. This applies to all styles except manila, which runs lighter.

Exact measurements of envelopes--Sizes not mentioned below are given in the descriptions.

Commercial and Official

5	5½x8⅝	9	3⅞x8⅞
6¾	6 x9½	10	4⅛x9½
6¾	6½x9¾		

Square or Baronial.

4	4⅝x6⅜	5	5½x7⅞

Wallet Flap.

4	3⅝x5½	5	3¾x5¾

"Mail Pouch"--A standard quality, clean white smooth finish stock well gummed. In boxes of 500 M M
S2150--XX . .$0 50 $0 60
S2151 OAXX . 60 70

"Arrow Brand"--White wove finish, close fiber, flat folded, superior finish, surprise. Worth at least 20 per cent more when compared with commercial goods. ¼ M in box. Per M
S2140--3X $0 65
S2141--4X 70
S2142--4AXX 84
S2143--5X 86
S2144--5AXX 95
S2145--6X 1 00
S2146--6AX, baronial, wallet flap 96

FAMOUS "ELECTRIC MILLS" ENVELOPES.

With price as a standard and quality as a basis this brand is incomparable.

"Electric Mills." Best smooth finish envelopes uniformly made, heavily gummed. ¼ M in box.
Per M
S2 . . . . . $0 65
S1 70
S1 80
S1 90
S1 . . . . . 1 00
S1 . . . . . 1 10
S1 . . . . . 1 20
S1 . . . . . 1 40
S1 . . . . . 1 60
S1 . . . . . 1 80
"Electric" Mills, Cream or Gray Laid. Same as above, but cream tint. ¼ M in box Per M
S1 . . . . . $0 75
S1 90
S1 . . . . . 1 00
S1 . . . . . 1 20
S1 . . . . . 1 40

ENVELOPES--Continued.

"High Grade" B. B. Mills"--Superfine wove finish, white. Per M
5-XX $1 50
High cut. Full wt. ¼ M in box
S1500--XXX white. Per M $1 00
S1502 XXX white. 1 00
S1501--6½XX " 1 15
S1503 6½XX " 1 90

Wallet Flap Envelopes--An interesting demand for this style. Few correct sizes. ¼ M in box. (40 inches to a shoestand.)

Electric" Brand--Extra good quality smooth cream stock
S1630 XX . . Per M $1 00
S1631--XXX. " " 1 05

"B. B. Brand"--Extra fine white left dried stock, best quality.
S1625--XXX6 . . . . . Per M $1 85
S1623--XXX5 . . . . . " 1 60

"Special Linen Finish"--Good wt. and quality
S1724--XX4 . . . . . Per M $1 05
S1625--XXX5 . . . . . " 1 30

Fine quality white cloth finish stock.

Size. Specialty Linen. 5¼ in high cut wallet flap, colored to match Specialty Linen" cream laid stock. Each envelope lap to match
S3629 tablets. ¼ M in box. Per M $1 40
S1626--XX4 . . . . . Per M $1 50
S1627--XXX5 . . . . . " 1 70

Baronial or Square Cut--Flaps. 3¼ x 5¼ high cut. ¼ M in box. Per M
S1 3 4XX white $1 05
S1 3 4XX " 1 35

S1594, "Manila Pay" 2¾x4¾ . . . 1000 in box. Per M 42c

S1595, Manila Collar--XX open end, 3½x5½ . . . . . Per M 50c

S1600, Drug Envelopes--Standard No. 2 reg. Manila. 2¼ x4¼ in box. Per M 48c

S1597, Manila Envelopes--6¾XX No. 1 grade 3½ in. Assorted, ¼ M in box. Per M 55c

S1598, Duplex--6¾ X 3½ No. 3 reg. White outside, blue inside. Each one weighs ½ M in box. Per M $1 00

Photo Mailing--Corrugated board and heavy manila. Enough half postage. Ends with open purpose of being closed. 100 to box
S1611 . . . . . 5¼x7¾ $0 75
S1612 . . . . . 6¾x9¾ 1 00
S1617--8½x11½ 1 50

Items marked with a star in front of the number (as ✱80) are special at that figure for the current month. The same items will be found on the yellow pages at the same prices, but with full discounts.

"ELECTRIC" BRAND.

Every merchant who wants a quality envelope at the right price should try our special value.

"Electric" Brand--White wove, light blue. Has reputation of quarter century's handling back of it. Attractive appearance.
S2240 Com. note 3½ . . . Ream $0 30
S 3½ " " " 40
S 4½ " " " 50
S Lgl. cap. 4½ " " 50
S Com. Note 5½ " " 60
S Lgl. Legal 5½ " " 60
S 6¾ " " 80
S3000--" 14 " " 1 00

"Select Mills"--Our own brand. A service producer. Can be made. White wove perfect finish ¼ cream quite transparent. Envelopes only. Ream
S1800--Commercial note, 3½ $0 15
S1801--Commercial note, 4½ 20
S1802--Commercial note, 6½ 30
S 3½ " " " 20
S 4½ " " " 25
S 5½ " " " 30
S1805--Legal cap 5½ 30

"Kenmore" Linen Finish--Fine cream laid paper rich cream tint. Guaranteed against stain in water wrapper.
S1407--Note 4½ . . . Ream $0 50
S1395 " 5½ " " 60
S1393--" 6¾ " " 75

Superfine "Crest" Brand--White wove rag stock air dried. Bearing our "BB" brand it is the best commercial envelope paper.
S2007--Let., cap 5½ . . . Box $1 25

High Grade "B B" Brand--White Wove--We invite comparison. We will say 25 pers lobbing for 15c per lb. Pure No 1 soft fiber, calendered finish Runs uniform. Handsome wrapper.
S2221 Com note 3½ . . . Box $0 65
S2222 " Lgl. cap 5½ . . . " 78
S2223--Letter pp. 6¾ . . . " 1 30
S2236--Panteon 12 x 18 . . " 1 82
Legal cap 5½ . . . " 1 82

S2265, Winnipesaukee Abstract Cap--Superfine watermarked paper ruled lined and numbered 1 to 4 on each page. For abstract purposes. Needed 8x14 . . . . . Box, 70c

"MANCHESTER" WRITING PAPER WITH ENVELOPES TO MATCH.

Pure linen stock water marked. Packed ¼ ream 132 sheets paper

Papers.

S2295--Octavo, ruled . . . Box, 25c
S2297 Octavo, plain . . . " 25c
S2298--Com. Note ruled . . . " 30c
S2299--Com. Note, plain . . . " 30c

Envelopes To Match.
¼ M (132), in box.
S2250--Octavo size. . . . . Box, 20c
S 1--Com. size . . . . . " 25c

TWO POPULAR SPECIALTIES.

Combination Package--24 Sheets of Writing Paper 24 Envelopes to Match 1 Penholder 6 Good Quality Pens PACK 5¢

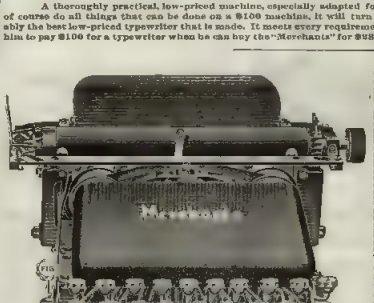
SPECIAL 24 SHEETS NOTE PAPER 24 ENVELOPES 5¢ per Package

S340, Set--1 doz. sheets commercial paper 1 doz. XXX No. 3 envelopes to match (6 in a box). Paper in a full only packed separately from envelopes. Add to a name on type. Box, 42c

S340, Paper and Envelopes--1 quire (24 sheets commercial writing paper of 2 No. 6 envelopes to match. In printed man commercial size envelopes 45c

The High-Grade "MERCHANTS" TYPEWRITER

A thoroughly practical, low-priced machine, especially adapted for the use of retail merchants. Although it will not of course do all things that can be done on a $100 machine, it will turn out rapid, clear-cut, best grade work. Unquestionably the best low-priced typewriter that is made. It meets every requirement of the average retail merchant, and it is only for him to pay $100 for a typewriter when he can buy the "Merchants" for $28.50. Buy one for your own use and you will sell many



87 Standard Universal Keyboard with shift keys for capitals and figures, all parts interchangeable, balance made of standard paper. Key and type rods of cast piece finest steel, reducing lots, number of parts half the usual requirement, ball bearing, centerings and wheel movements cut from finest tool steel and automatically takes up all wear. The latest spool devices known to the typewriter world. The wheel escapement releases with the key touch. Part of the ball bearing carriage and at the same time prevents any possibility of jumping or skipping spaces. Arrangement of type bars insures absolute alignment in original and manifold copies, single lever shift-key for capitals and figures with lock to hold it when all capitals or all figures are desired. Carriage is light and strong and of the general form used on most high grade machines. It takes paper 9½ in. wide and writes a 7 in. line. Each steel type has individual spring which can be adjusted to light or heavy action. *The combined workmanship, best material and workmanship insure the durability with which the Merchants excels.* Ribbons are on metal spools which fit the ribbon and can be changed instantly. The ribbon is cut by adjusted adjustable marginal stops, rack and pinion connection between carriage and driving drum. Carriages are interchangeable and an extra hard pinion for manifolding can be furnished at a slight extra cost. Weight of machine 11 lbs. Shipping weight 28 lbs. Each packed securely in case. Each, **$28.50**

NOTICE!

We will ship a "Merchants" typewriter with the privilege of returning within 10 days if not entirely satisfactory.

Order TODAY!

Extra Ribbon for Merchant's Typewriter.

S170--Best grade purple copy ink will not clog the type. Each one inked spool. Each, **42c**

Merkel Auto-Engines

The name "Merkel" when applied to automobile engines is synonymous with the production of motors noted for their speed, power, correctness of design and perfect construction.

An Auto-engine, in order to give satisfactory service, must be especially designed and adapted to the particular style of car in which it is to be used. For the various types of machines to which Auto-engines are adapted there is nothing better offered than the following Merkel models:

For Light Runabout purposes:

Four cylinder, Vertical, Air cooled 3½ in. x 3½ in., 12-14 B. H. P.
" " " Water " 3½ in. x 3½ in., 14-16 B. H P.

For Light Tonneau Cars, complete weight of which does not exceed 2,000 lbs.:

Four cylinder, Vertical, Water cooled, 4 in. x 4½ in., 20-22 B. H. P.

For Large Touring Cars:

Four cylinder, Vertical, Water cooled, 4⅝ in. x 5 in., 35-40 B. H. P.

Merkel Motor Cycles

will be fully described and illustrated in the next issue of this magazine. Watch for it.

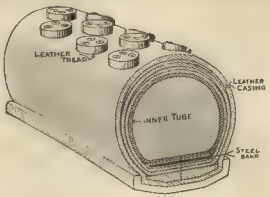
The original Merkel idea on grip control will there be fully explained.

The motor used on the Merkel Cycle is without a peer. Both inlet and exhaust valves are mechanically operated. Cams and secondary shafts rest on ball bearings while all main bearings and lower end of connecting rods run on **"Hess-Bright"** ball bearings.

The new Merkel Motor Cycle is acknowledged to be a veritable two-wheeled Automobile.

Representatives wanted for all unoccupied territory.

MERKEL MOTOR COMPANY
LAYTON PARK
MILWAUKEE, WISCONSIN



Patented May 23, 1905.

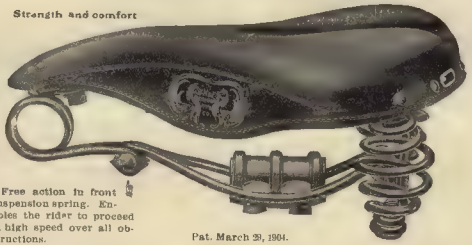
The Mesinger Pneumatic Leather Tire will be shown the first time in the Madison Square Garden Automobile Show, Second Balcony, Space No. 205. Come and see us for information. It is not an experiment, but being tested for six months, running over 1000 miles without causing any obstructions, during which time the tire ran deflated for 15 miles without injuring the casing. One nut fastens tire to the rim with a connecrion of a steel band. The tread is covered with leather disks fastened with screws and can be renewed when they are worn off. Correspondence invited.

H. & F. MESINGER MFG. CO., 1801-1807 First Avenue, New York

Mesinger Motor Saddle 1906

The ORIGINAL American Motor Saddle

Strength and comfort



Free action in front suspension spring. Enables the rider to proceed at high speed over all obstructions.

Pat. March 29, 1904.

MODEL "AA"

The only coil hair padded suspension saddle. Two telescope springs in the rear makes comfortable riding on rough roads. Makes Motor Cycling more Tractable.

H. & F. MESINGER MFG. CO., 1801-1807 First Ave., New York

BELLS.

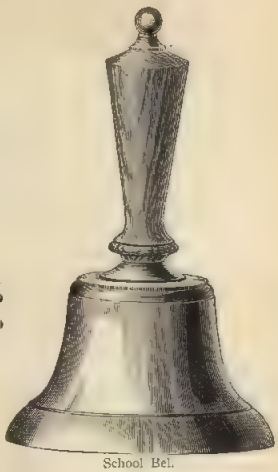
Buell Pattern.

MILKMEN'S, AUCTIONEERS' AND SCHOOL BELLS.

Extra Heavy.

Pure Metal, Fine Polished

Pattern and No.	Diam. in Inches.	Per doz
Buell Pattern.	6⅜	$40.00
School Bell No. 12. . .	6½	64.00



School Bell.

FARM BELLS.

Cut of Bells Nos. 1, 2 and 3.

Cut of Bell No. 4.

Price List of Crystal Metal Farm Bells.

BRONZED

No.	Diameter.	Weight, Complete.	Price
1.	15 in.	40 lbs.	$ 4.00
2.	17 in.	50 lbs.	5.00
3.	19 in.	75 lbs.	7.50
4.	21 in.	100 lbs.	10.00

SWISS HAND BELLS.

Pure Metal.

Fine Polished, with Stained Mahogany Handles.

Extra Tinned.

No. 4.	3⅛ inches diameter	Per doz	$ 9.00
No. 6.	3¾ inches diameter	"	13.50
No. 8.	4¼ inches diameter	"	22.50

Mitchell

PRICE, $175.00

It is Economy to buy the best in motor cycles. Profit by the experience of those who have lost money in handling other makes, and push the sale of the **MITCHELL** exclusively. You will never regret it. The price at which it is sold enables you to make a good profit, and as the **MITCHELL** when once sold stays sold, you have none of the after annoyances which so often beset the dealer who has the misfortune to handle inferior makes.

Do you want to sell a practical, reliable, safe and economical motor cycle? Then get the **MITCHELL.** Write at once for agency terms.

MITCHELL MOTOR CAR CO.

Racine, Wis.

Members American Motor Car Manufacturers Association.

Model E. Light Touring Car. 24 H. P. $2000

Four cylinder vertical, air cooled engine 24 H.P., mechanically operated valves. Jump spark ignition with synchronized system of distribution of the high tension current. Positive force feed lubrication. Sliding gear transmission, selective system having three speeds forward and reverse. Pressed steel frame and steel pan construction. Bevel gear drive rear axle of the floating type. Front axle I beam section, drop forged in one piece. New type worm and sector steering gear. Internal and external brakes on rear hubs. Body of graceful design, side entrance of the latest French type, roomy in proportions and luxurious in appointment. Wheel base 100 inches. Extra long springs, of special design and great flexibility. Wheels, 32 x 3½ inches. Weight, 1800 pounds. Speed up to 45 miles per hour. Two gas lamps, generator, three oil lamps, horn and full complement of tools, constitute the equipment.

Annular Ball Bearings are Employed Throughout

Certain agency opportunities are still open. Representative dealers are requested to communicate with us to insure early delivery of cars

Corbin Motor Vehicle Corporation

Makers of Corbin Air Cooled Motor Cars :: New Britain, Conn.

4 W. 38th St., New York
1406 Michigan Ave, Chicago
5905 Centre Ave., East End, Pittsburgh

43 Columbus Ave., Boston
115 E. 7th St., Cincinnati
470 Broad St., Newark

...THE...

Universal Carburetor

Is sold under a positive guarantee to increase the efficiency of the engine. Travel more miles with less consumption of gasoline than any carburetor on the market. Also to supply a uniform mixture at all engine speeds. :: :: ::

DISTINCT FEATURES

No needle valves to get out of fix.

No flooding to cause waste or bother.

No matter what position the car may be in, there is always a perfect level of gasoline at the spray nozzle. If you desire to get the best possible results from your engine the "UNIVERSAL" will certainly do the business.

Orders, large or small, filled with accuracy and dispatch.

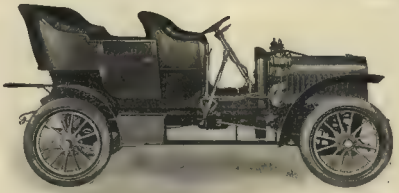
Our booklet is yours for the asking. It tells all about it, also what users have to say about it

SPEED CHANGING PULLEY CO.
Indianapolis, Indiana

WE EXHIBIT AT CHICAGO

MOLINE

1906 1906



MODEL "C" 18-20 Horse Power Light Touring Car $1750.00

Four cylinder vertical water cooled motor under hood in front. Pressed steel frame, three speed sliding gear transmission, Mechanical oiler, Jump spark ignition with 60 ampere storage cell.

Wheel base, 100"; Tires, 32"x3½". Shaft drive to bevel gear in rear axle.

Double side entrance body, strictly up to date in every particular.

MODEL "A" 30-43 Horse Power Touring Car $2500.00

Same general lines as Model "C," but larger in every way.

Wheel base, 100"; Tires, 34"x4". Exceedingly large and roomy side entrance tonneau with all appointments as fine as can be produced.

MODEL "G" 16 Horse Power Touring Runabout $1000.00

Double cylinder horizontal opposed motor under the body of new and very satisfactory design.

Ample bearing surfaces, plenty of radiation surfaces, new style of circulating pump, all spur gear planetary transmission, roller chain drive.

Side entrance detachable tonneau body of very pleasing lines, Mechanical Oiler.

Wheel base, 86": 30" wheels. A thoroughly substantial rig for common-sense people.

A special feature is made of having cylinders, pistons and rings actually ground to a standard gauge, thus making all parts interchangeable.

Another feature of the factory work is the extended use of jigs for drilling cylinders, crank cases, transmission cases, etc., so that repairs which will fit can be promptly furnished when needed.

Will exhibit at Armory Show in New York, January 13th to 20th, also Coliseum Show in Chicago, February 3d to 10th.

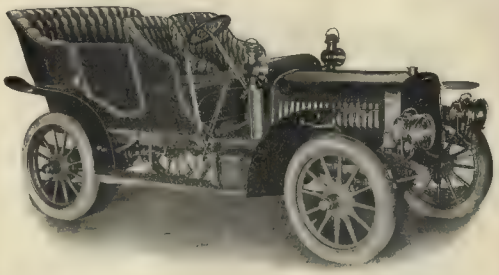
Moline Automobile Company
EAST MOLINE, ILLINOIS

Automobile Exchange & Storage Co., 133-39 West 38th St., New York City.
C. H. Saunders, Motor Mart, Boston, Mass.

1906

MOON

(The honest car)



1906 Moon. Model A

$3000

F. O. B. St. Louis, Mo.

The Moon is a superior car and will be appreciated by experienced buyers :: ::

ENGINE—4-Cylinder Special. 30-35 H. P.
BODY—Most approved type. Seating capacity 5.
FRAME—Cold pressed steel, drop forged spring hangers.
TRANSMISSION—Sliding gear type, 3 speeds forward and 1 reverse; direct on high speed.
DRIVE—Bevel gear. Weight, 2400 pounds. Wheel base, 106".
BRAKES—3; 2 on rear hubs, 1 on transmission.
COOLING—By water. Improved honeycomb radiator with fan.
IGNITION—Jump spark, batteries and coil.
CLUTCH—Improved multiple disk.
TIRES—Front and rear 34"x4". Speed 3 to 50 miles an hour.

FOR FURTHER PARTICULARS WRITE TO

MOON MOTOR CAR CO., St. Louis, Mo.

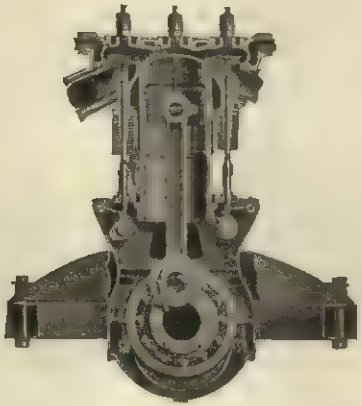
SEE US AT THE AUTOMOBILE SHOW

69th Regiment Armory, New York, Jan. 15th, 1905. Look for us on the main floor.

Moore Automobile

"The Ball Bearing Car"

40 H. P.



Vertical section through one cylinder, showing inlet and exhaust valves, short levers riding on cams and carrying lifter rods. Ball bearing of crank shaft with the yoke holding same to upper half of crank case. Hollow crank and wrist pins. Note very long and light piston and extreme length of valve rod guides.

In building the **MOORE** our aim has been to produce the best car possible with the material and information at present available. Its construction, while simple, is strong and durable, and the car has been designed to withstand the twists and strains incident to rapid traveling over our rough and uneven roads.

The **MOORE** car has many new and valuable features, not the least of which is the use of ball bearings on each revolving shaft, thus gaining for it the title, "The Ball-Bearing Car." Simplicity of operation is also a noticeable feature.

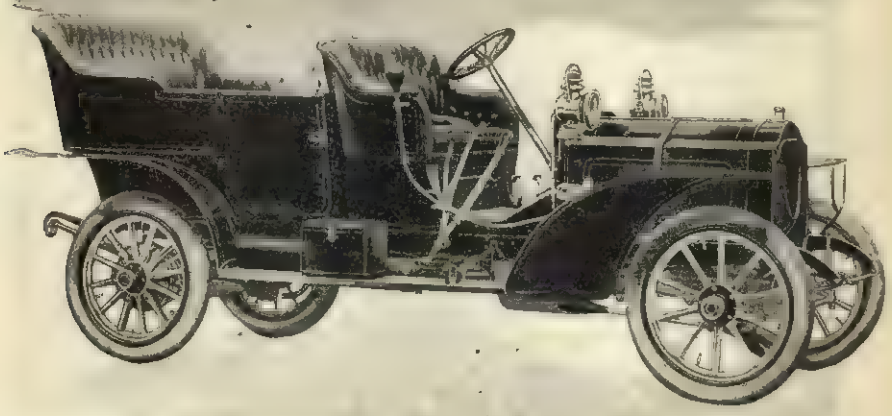
The **MOORE**, with its complete and well-thought-out design, will be found to give the maximum of service with the minimum of trouble and expense. It has ample speed for all purposes, and is just the automobile for the man who wants a safe, speedy, reliable touring car.

Write for further particulars.

Moore Automobile Co.,

571 Fifth Ave., New York City

Packard



Before a single "Packard 30" was delivered four cars were driven 50,000 miles including the Detroit-Chicago-Detroit run of 606 miles in 20½ hours and the work of the Glidden Tour patrol car.

A "Packard 30" acted as patrol car in the Glidden Tour and each day covered more than twice the mileage of the regular contestants under exactly the same road conditions but carrying from five to eight people.

Price (in standard colors and equipment) - - $4,200 f. o. b. Factory
Special colors, Upholstery and Equipment, Extra.

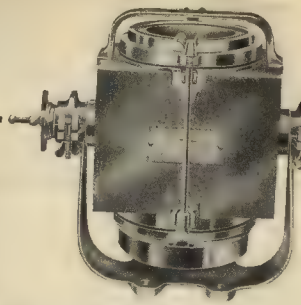
Packard Motor Car Co., Dept. 11

Member Association Licensed Automobile Manufacturers

Detroit, Mich.

New York Branch 1540 Broadway

Make your own gas



The Neverout
TRADE MARK

Patent Invertible

Safety Gas Producer

is the only safe method
for lighting motor-cars and boats.

Makes gas only as needed—at a cost of less than ½ cent per hour. No gas confined under pressure, no danger of explosion. Instantly lighted and extinguished.

No trouble, no dirt, no odor

A truly great invention that is as wonderful in its way as is

The Neverout

Mirror Lens Searchlight

—the most powerful of all light projectors.
Money back if not satisfactory.

Write for free booklet

Rose Manufacturing Co.

Largest searchlight factory in the world

911 Arch St., Philadelphia, Pa.

See opposite page

National Model D, 4 cylinder. 35-40 H. P.

Price, $3000

The Car that Broke the World's Records

National Model E, 6 cylinder. 50-60 H.P.

Price, $4000

An Innovation in Touring Cars

Stylish, powerful, smooth running, easily controlled. Aluminum body, seats 7 passengers comfortably, **all facing forward.**

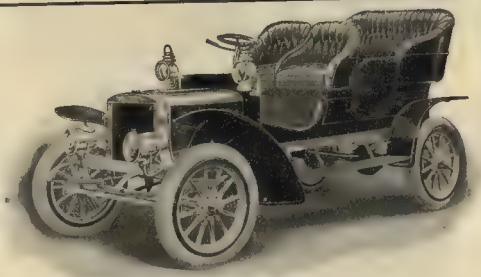
WRITE FOR PARTICULARS

NATIONAL MOTOR VEHICLE CO.

1003 East 22d St., Indianapolis, Ind.

DISTRIBUTORS—Linscott Motor Co., 163 Columbus Ave., Boston. Homan & Schulz Co., 38th & Broadway, New York. Ralph Temple Auto Co., 311 Michigan Ave., Chicago. Tioga Auto Co., Broad & Tioga Sts., Philadelphia. Fisher Auto Co., 330 N. Illinois St., Indianapolis. Liberty Auto Co., 138 Beatty St., E., Pittsburg. Colonial Auto Co., 3944 Olive St., St. Louis.

Northern



Silent Northern Touring Car, 20 h. p., 5 Passengers, Double Side Entrance, 4 Inch Tires, Gas and Oil Lamp Equipment, $1800.00

The same practical advantages which distinguish the Northern Touring Car for 1905 will characterize our 1906 products, viz: Quietness in operation, ease of riding and remarkable freedom from vibration and dust.

The Silent Northern still stands alone as the car of simplest and most compact mechanism. Its encased mechanism, three-point motor support, and 24-inch fly-wheel with fan blades cast integral have demonstrated again and again their efficiency and vital importance.

Power applied direct to rear axle, only one universal joint. No belts, no chains, no gaskets. No truss rods, no strut rods, and no side levers. No vibration.

- - 1906 MODELS - -

Model K, 30 h. p., 4 Cylinder Touring Car with gas and oil lamp equipment,	$3000
20 h. p., Limousine,	2500
20 h. p., Two-cylinder Touring Car with gas and oil lamp equipment,	1800
7 h. p., Sturdy Northern Runabout with lamp equipment,	650

Dealers are invited to write at once for circular 53 containing important advance information.

Northern Manufacturing Co., · Detroit, U. S. A.

Member Association of Licensed Automobile Manufacturers.

We will exhibit at Madison Square Garden January 13 to 20, 1906, and at Chicago in February.

Jones SPEEDOMETER-ODOMETER (1906 Model)

not only shows the **speed** of your car and registers the Season mileage up to 10,000 miles, but has a three figure 'Trip' attachment which registers the mileage up to 100 miles. A touch of the button instantly resets the 'Trip' column to zero.

In both the Season and 'Trip' registers the miles are shown in plain **black** figures and tenths of miles in **red.**

Speed is indicated and mileage cumulatively recorded whether the car go forward or backward.

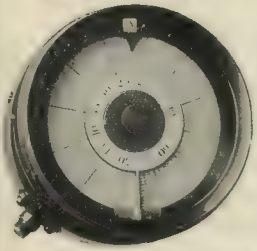
Full description of our 1906 combination Speedometer-Odometer and all other instruments in our new catalog---without question the most artistic catalog ever compiled for an automobile accessory. Sent free upon application.

AN ADJUSTABLE SHAFT CONNECTION permits of passing the Shaft through the floor; through or around, either end of the dash.

THE DASH BRACKET occupies a very small space on the dash board and is adjustable to permit of the instrument being **set at any angle desired.**

Jones Speedometer 124 West 32nd St., New York

Bullard's Speed-Recorder



Time indicated, 22 minutes past nine o'clock

Is a clock, an Odometer, a Speed-recorder, making a permanent record on a card of every mile traveled, also a trip milage and a season milage record.

It tells the speed you go. When, and how long you stop. It is a sure protection against the guessing of any man. Indespensable on commercial vehicles as it keeps tab on the car every moment it is out.

It tells the doctor when he made a call and how long.

It cannot lie. It tells the truth, the whole truth, and nothing but the truth.

WRITE FOR FURTHER INFORMATION TO

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G&J

BICYCLE TIRES

INCREASE IN POPULARITY YEAR BY YEAR

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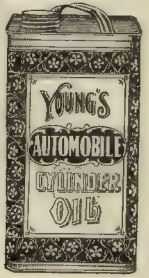
CHICAGO DENVER SAN FRANCISCO



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But we are **OLD** in the Oil Business. Established 22 years. Our increased success of the past year proves that YOUNG'S Oils and Greases are of superior merit. Our new Metal Polish is a **Dazzler.** Sole owners of the celebrated **COX** Tire Patches, Corrugated Surface and Feather Edge; stick best and wear longest.

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Packard

The man who visits the Packard plant sees every modern mechanical device that is applicable; sees a thousand minds concentrated on a single type of car; feels the Packard spirit of perfection; then knows why the Packard stands in a class by itself.

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PERFECT VISES.

STATIONARY BOTTOM

FIG 6889.

A screw Vise with perfect quick adjustment.

PRICES FIG 6889

STATIONARY BASE

No.	Width Jaws, Inches.	Jaws Open, Inches.	Weight, Lbs.	Each.
0	2½	4¼	30	$7 75
1	3	5½	45	9 00
2	4½ or 5	6	70	11 50
3	5½	8	120	17 50
4	6½	9	180	23 00

SWIVEL BASE

0	2½	4	40	$ 13
1	3	5½	60	16 50
2	4½ or 5	6	78	18 50
3	5½	8	110	19 50
4	6½	9	150	23 00

LIGHTNING GRIP VISES.

FIG 6881.

DESCRIPTION FIG 6881

The loose jaw is instantly adjusted and the work firmly fastened with a single turn of the handle

PRICES, FIG. 6881
STATIONARY OR SWIVEL BASE

No.	Width Jaws, Inches.	Jaws Open, Inches.	Each
11	3½	5	$4 50
13	4½	8	11 50
14	6½	8	17 50
15	7	11	39 00

GIPSY VISES.

A HANDY VISE FOR COMMON USES

FIG 6850

PRICES FIG. 6850

No.	Width Jaws, Inches.	Jaws Open, Inches.	Weight, Lbs.	Each.
63	2½	3	6	$1 75
66	3½	4	14	2 50
67	4	6	22	4 00

YANKEE QUICK ACTING LEVER VISES.

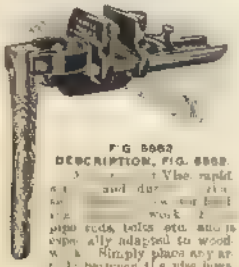

FIG 6863

DESCRIPTION, FIG. 6863.

This Vise rapid[ly] and dur[able] ... work ... pipe ends, bolts etc. and is especially adapted to wood-w[orking]. Simply place any ar[ticle] between the vise jaws, turn the nuts by means of the lever, and work [is] secured

PRICES FIG 6863

No.	Width Jaws, Inches.	Weight, Lbs.	Each.
601	3	4½	$1 75
602	3½	7	2 25
603	4½	12	2 75

UNIVERSAL JEWELERS' VISES.

DOUBLE SWIVEL AND QUICK ACTING.

DESCRIPTION FIG. 6863

This Vise is suitable for jewelers, opticians, dentists or any manufacturer of small and [delicate] articles.

Its jaws open any distance required by simply pulling out the front jaw with the finger and placing the article between the jaws, then one half turn of the screw fastens the work in the Vise

FIG 6863

JEWELERS' ANVIL

The Anvil can be used on the base of the Vise by simply pulling the vise lever forward [and] ... the Vise ... to base [of] ... the anvil thereon.

PRICES, FIG 6863.

No.	Width Jaws, Inches	Jaws Open, Inches	Weight, Lbs.	Each
2	2	4	6	$ 00
3	3	4	8	00
4	4	6	14	00
Vise nickel plated, extra				1 00
Anvil for Vise in block				80
Anvil nickel plated, extra				1 00
				40

CHAMPION VISES.

NO. 112

FIG. 6864.

PRICES FIG 6864

WITH CLAMP

No.	Size Jaw, Inches.	Weight, Lbs.	Per Dozen.
1 2	1½	4	$4 50
7	1½	5½	6 00
1 5	2	7½	9 00
2	2½	9	12 00
1	3	21½	15 00
12	4	37½	33 00
14	4½	38½	18 00
1 9	5	39½	24 00
20	42	4	30 00
21	3	77½	24 00
23	3	77½	30 00
25	3	8	36 00

*Steel jaws. †Steel and swivel jaws.

NO. 126

FIG. 6865.

BONNEY VISES.

NO. 9.

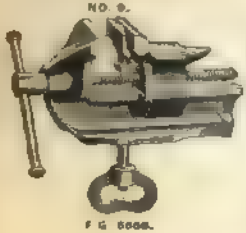

FIG. 6866.

PRICES, FIG. 6865.

SWIVEL BASE

No.	Size Jaw, Inches.	Weight, Lbs.	Per Dozen.
[illegible] steel jaws	2	2½	$13 00
1[illegible] steel [illegible] swivel jaws	2	3	21 00
1[illegible] steel jaws	3½	6	34 00
128, steel and swivel jaws	3½	4½	30 00
129, steel jaws	3	4	28 00
130, steel and swivel jaws	3	3½	42 00

PRICES, FIG. 6866.

No.	Size Jaw, Inches.	Weight, Lbs.	Per Dozen.
8, steel jaws	3½	5	$39 00
9 steel jaws, with swivel jaw attachment	3½	5	52 50

BONNEY VISES.

PRICES, FIG 6867

No.	Size Jaw, Inches.	Weight, Lbs.	Per Dozen.
A	1	1½	$3 75
1½	1½	1½	5 00
2	2	2	6 50
2½, steel jaws	2	2½	9 75
3, steel jaws, with swivel jaw attachment	2½	3½	13 00
3½, steel jaws	3	4½	16 00
4, steel jaws	3½	5	18 00
5, steel jaws, with swivel jaw attachment	3½	5	24 00
6, steel jaws	3½	5	19 50
7, steel jaws, with swivel jaw attachment	3½	5	25 50

FIG. 6867

NO. 280A

FIG. 6868

BONNEY IMPROVED MACHINISTS' VISES.

PRICES FIG. 6868

SWIVEL JAW FOR GRIPPING TAPERING PIECES

No.	Length Jaw, Inches.	Weight, Lbs.	Each.
470	2½	9	$3 25
500	3	13	5 00
570	3½	23	6 25
640	4	37	7 50

WITHOUT SWIVEL JAW AND WITH SWIVEL BASE.

530A	2½	8½	2 25
500	3	14½	3 50
570	3½	[illegible]	4 75
640	4	26½	6 00

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BEVEL AND SPUR GEARS.

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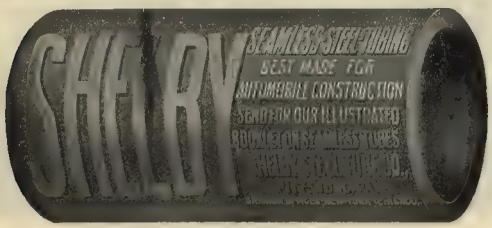
Transmission gears, bevel equalizing gears, steering gears, countershafts, connections, couplings, joints, carburetors, engine parts, and all other parts about an automobile.—**Made by**

MUNCIE AUTO-PARTS CO., *Muncie, Ind.*



Exceedingly Good Values in PLAYING CARDS.

Take your choice—Well known standard brands at saving prices, or non-advertised cards at rock bottom that give you better profits for yourself. If you will order a sample bill here you will find why I is we sell more playing cards than any other three jobbers in America combined. *Unless otherwise stated all come 1 doz. in a box.*

809. Steamboat [illegible] ... 65c

815 Lone Hand [illegible] ... of title ... Assd. ... $9.50. Doz. $80

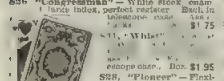
807. "Judge" —Best selling ... Assd. ... 96c ... Doz. $1.15

800. Umchito— ... Size ... perfect slip super enamel medallion backs, tuck boxes. Assd. in ... $1.35

822. "Four in Hand" ... White stock, assorted ... $1.40

8100 "Sterling" ... size. Assd. blue and red backs. Doz. $1.65

826 "Congressman" — White stock enamel ... index, perfect register. Each in telescope case. ... $1.75



"White" ... enamel finish. ... case. Doz. $1.95

828. "Pinpoint"— Flexible linen weave stock, ivory enamel finish, choice designs. Each in telescope ... Doz. $2.00

828, $2.00 Doz.

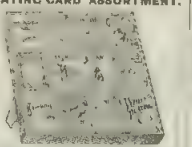
AMERICAN PLAYING CARD CO'S GOODS.

899. [illegible] ... $1.35, $1.15 Doz.

8201. [illegible] ... Doz. $1.40

848. [illegible] ... Round corners, black enamel ... red edged stock. Each pkg in glazed ... Doz. $1.75

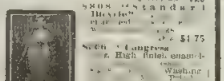
PLAYING CARD ASSORTMENT.



8907—Assrtd. 1 pack each of 12 different styles in retail from 15 to 25c each. Complete retail value $3.10. Pkd. in handsome colored display box ... Per pack $1.37

U. S. PLAYING CARD CO'S GOODS

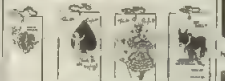
8943, "Cadets" — Small size, well polished assrtd. backs ... $6.00. Doz. 72c



8805 "Standard Bicycle" ... $1.75

8806 "Congress" ... High finish enamel ... Washington ... Night, and all other well advertised backs. ¼ doz. backs assrtd. in box ... Doz. $3.80

TALLY CARDS.



8401 ... 60c

8501 ... per 100. 90c

8502 ... $1.00

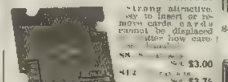
Assrtd. ... 2½x4½ ... Per 100. $1.00

8504 ... assrtd. 4 styles ... ornate appropriate quotations. Per 100, $1.50

8505 ... per 100 ... $1.50

8504, $1.50, 100. 8505, $1.50, 100.

PAINE'S DUPLICATE WHIST TRAYS.



Strong attractive way to insert or remove cards cannot be displaced after how cards are ... $3.00

$12 ... $3.75

$10 ... $4.50

COMPOSITION POKER CHIPS.

Guaranteed first quality. 50 white and ... in red and blue. In durable pasteboard ...

IMPORTED VEGETABLE IVORY DICE

Will not chip, hard to tell from genuine ivory. Cream color, black spots. All 1 doz. in box.

S 3231 ... Square corners. Doz. ... $1.25

S 3232—Square corners, 16/16 in. ...

POKER DICE SET.

S3237 — Vegetable ivory, ⅝ in. Dice to set. Each set in box, 5 dice sets in pkg. Doz. sets $2.75

BONE DICE.

Square bone. "Crown" brand, first quality. 100 in box.

Per 100

DICE CUPS.

S119. Solid ... Doz.

S119 ...

COMPOSITION BOOKS.

A much improved line ... and ... complete assortment of these rapid sellers ...

7X8¼ COMPOSITION BOOKS.

8500, 20 Doz. 8501, 25c Doz.

8500, "Butterfly"... 96 pp., ruled, cream wove ... gold title ... Doz. 20c

8501, "The Record" ... Doz. 25c

8504 "Dutch Scenes" ... cloth quarter bound ... Dutch boys & girls and landscape views ... Doz. 32c

8503, 32c Doz. 8504, 32c Doz.

8503 "First Lessons" ... crude slate finish white wove paper, red flexible cover, cloth quarter bound, title in black ... Doz. 34c

8504 "Marginal" ... Doz. 35c

8505, "Red Line" ... Doz. 37c

8510, "Pebble Cover": 120 pp., ruled clean white wove paper, highly calendered round corner ... 70c

8540 The 400 ... 72c

8521 8th Grade ... white wove paper, fine finish, pasted cut corners, red edges, 1 line sewed, flexible, leather back, leather ... bevelled ... $1.70

... $ ... Doz.

... Doz.

... bookkeepers account book stock, fly leaf in front and back, leather stiff board cover, cloth covered, turned edges. *See it a reasonable price for this book* ...

8506 ... Doz.

8506 Sweet Rhyme ... 120 pp. ... cream wove ... on front and ... Miss Muffet, etc. ... Doz. 37c

8508, "Stiff Cover" ... finish cream wove ... Doz. 38c

8509, "Little School" ... smooth finish ink writing paper, red flexible cover, cloth quarter bound, linen sewed ... Doz. 72c

8510, "Little ... Modern Commercial, white wove paper, red edge, linen sewed, flexible ... cover, cloth ... sewed, in pkg ... Doz. 72c

"THE EARTH" COMPOSITION BOOK.

The extreme size for the 5c composition book has been 200 pages. here is absolutely the ... The recent 120 page book ... to entice trade

... "The Earth" ... white wove paper, ... cloth quarter bound in ... 39c

8x10 COMPOSITION BOOKS.

8515, 36c Doz. 8516, 36c Doz.

8515, "High School" ... 33c

8516 "Watch us Grow" ... 36c

8517, 42c Doz. 8518, 42c Doz.

8517 "Choose Me": 100 pp., ruled, fine medium weight wove paper, flexible cover, cloth quarter bound, assrtd. 2 line tops in pkg ... 39c

8518, "Red Ball" ... Red Ball ... Composition Book ... in stock ...

ADZE EYE NAIL HAMMERS.

FIG. 7114.

PRICES, FIG. 7114.

No.	Size.	Weight, Lb. Oz.	Per Dozen.
70	0	1	$ .50
	1	1 4	.60
72	1½	1	.80
73	2	8	.80
74	3	7	.90

PRICE, FIG. 7115.

No.	Size.	Weight, Lbs.	Per Dozen.
180	13/4	2	$8.80

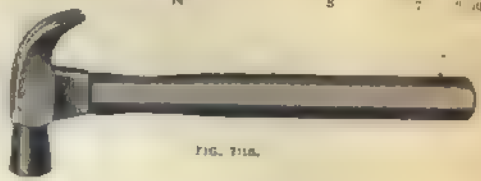


FIG. 7115.

ADZE EYE BELL FACE NAIL HAMMERS.

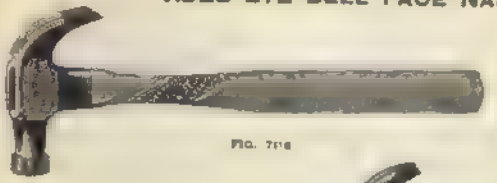


FIG. 7116

PRICES, FIG. 7116.

No.	Size.	Weight, Lb. Oz.	Per Dozen.
80	1	1 4	$9 .40
81	1½	1	8 .50
82	2	13	8 .60
83	3	7	7 .50

PRICE, FIG. 7117.

No.	Size.	Weight, Lbs.	Per Dozen.
140	13/4	2	$6 0

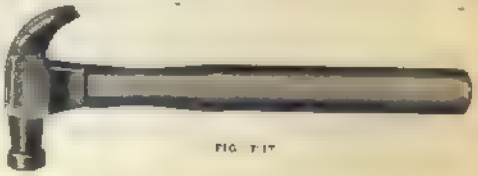
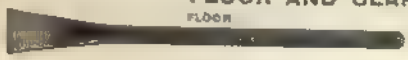


FIG. 7117

FLOOR AND CLAPBOARD CHISELS.



FLOOR

FIG. 7118.

PRICE FIG. 7118.

No. 3400, per b $7 50

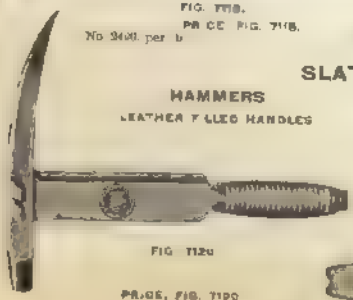
CLAPBOARD

FIG. 7119

PRICE FIG. 7 19

No. 3430, per $1 $ 0

SLATERS' TOOLS.



HAMMERS

LEATHER FILLED HANDLES

FIG. 7120

PRICE, FIG. 7120

No. 3650, each $5 50

TRIMMERS.

LEATHER FILLED HANDLES

PRICE, FIG. 7121

No. 3855, each $4 00

FIG. 7121

SHINGLE OR SLATE CLEAVERS.

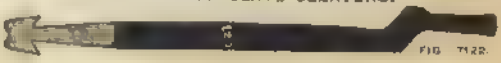


FIG. 7122.

PRICE FIG. 7122

$4

COOPERS' HAMMERS.

FIG. 7123

PRICES, FIG. 7123.

No.	Size.	Weight, Lbs.	Oz.	Per Dozen.
200	1	3		$16 00
201	2	3	6	17 00
202	3	3		18 00
203	4	3	8	19 50
204	5	4		20 00
205	6	4	8	21 00
206	7	5	"	22 00
207	8	6	"	24.00

These weights do not include handles.

COOPERS' DRIVER.

O.L. FINISH.

FIG. 7124.

PRICE, FIG. 7124.

No. 1220, 1¾ to 1¾ inch, per dozen $9 00

PRICE FIG. 7126.

No. 2460 weight 3½ to 5 lbs., per lb. $0 50

SPLITTING CHISEL.

FIG. 7126.

HEAVY PATTERN

FIG. 7130.

HOOP SETS.

PRICE FIG. 7129.

No. 2550, weight 4 to 15 lbs. per lb. $0 40

TINNERS' FAVORITE RIVETING HAMMERS.

FIG. 7127

PRICES FIG. 7127

Nickel Plated Extra Tool Steel

No.	Size.	Weight, Lbs.	Oz.	Per Doz.
210	1	"	8	$6 75
211	2	"	10	7 00
212	3	1		7 00
213	4	1	6	8 00
214	5	1	8	8 55
215	6	1	12	9 50

PRICES FIG 7128

Nickel Plated Extra Tool Steel.

No.	Size.	Weight, Lbs.	Oz.	Per Doz.
210	1	"	8	$6 75
211	2	"	10	7 00
212	3	1	"	7 50
213	4	1	4	8 00
214	5	1	8	8 50
215	6	1	12	9 25

TINNERS' FAVORITE PANEING HAMMERS.

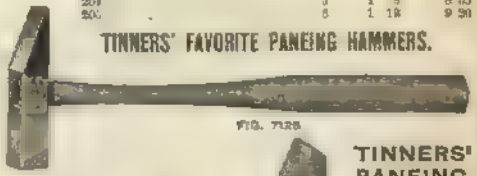


FIG. 7128

TINNERS' RIVETING HAMMERS.

OCTAGON FACE.

FIG. 7129.

PRICES, FIG. 7129.

No.	Size.	Weight, Lbs.	Oz.	Per Doz.
220	1		8	$6 00
221	2		12	6 25
222	3	1		6 75
223	4	1	4	7 25
224	5	1	8	7 75
225	6	1	12	8 50

TINNERS' PANEING HAMMER.

SQUARE FACE.

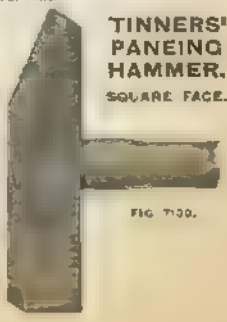


FIG. 7130.

PRICES, FIG. 7130

No.	Size.	Weight, Lbs.	Oz.	Per Doz.
230	1		8	$6 00
231	2		12	6 25
232	3	1		6 75
233	4	1	4	7 25
234	5	1	8	7 75
235	6	1	12	8 50

The weights Figs. 7127 to 7130 do not include handles.

PLUMB BOBS.

CAST BRASS, SCREW TOP, STEEL POINTED.

FIG. 9974.

LEAD, STEEL POINTED.

FIG. 9975.

PRICES, FIGS. 9974 AND 9975

No.	Weight, Oz.	Per Dozen.
2 brass, steel pointed	6½	$4 50
3 brass, steel pointed	12	6 75
4, lead, steel pointed	18	3.50

PRICES, FIGS. 9976 AND 9977

No.	Weight, Lbs. Oz.	Per Dozen.
1, iron	9½	$0.84
1½, iron	18	1 60
1½, iron, extra heavy	1½	3 00
5, iron, extra heavy	3½	2 25

JAPANNED.

NOS. 1 AND 1 1-4. NOS. 11-2 AND 3.

FIG. 9976.

FIG. 9977.

FIG. 9978.

STANDARD BRASS PLUMB BOBS.

WITH SCREW CAPS AND STEEL POINTS.

PRICES, FIG. 9978.

No.	Weight, Lbs. Oz.	Each.
1	9	$0 58
2	12	1 00
3	1½	1.35
4	3	1 50
5	4	2.00

GUN METAL PLUMB BOBS.

STEEL POINTS ARE SCREWED IN

PRICES, FIG. 9979.

No.	Per Dozen.	Oz.	Per Dozen.
2	$3 00	4	$10 00
4	7 25	10	15 00
6	9 25	16	23 00
8	12 00	24	25 00
10	16 00	32	27 00
12	17 00	48	39 00

FIG. 9979. NO. 11.

PLUMB BOBS.

HEAVILY NICKEL PLATED OVER A HEAVY COAT OF ELECTRO COPPER SOLID BRASS SCREW.

FIG. 9980, NO. 60.

FIG. 9981, NO. 60.

FIG. 9982 NO. 80.

PRICES, FIGS. 9980 TO 9982.

No.	Length Over All, Inches.	Per Dozen.
50	3½	$1 20
60	3½	1 60
80	4	1 40

NICKEL PLATED PLUMB BOBS.

ACCURATELY MADE FROM FINE QUALITY SOFT GRAY IRON.

NO. 12

FIG. 9983.

FIG. 9984.

PRICES, FIGS. 9983 AND 9984

No.	Per Gross.
11	$ 9 00
12	24 00

Weights per dozen, No. 11, 4 pounds, No. 12, 11 pounds.

MERCURY PLUMB BOBS.

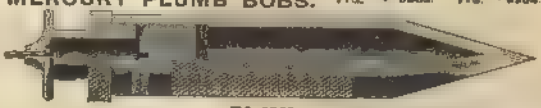


FIG. 9985 STEEL PLUMB BOBS

DESCRIPTION, FIG. 9985.

These Plumb Bobs are made from solid steel, bored and filled with mercury. Noteworthy features are their great weight in proportion to size, low center of gravity, small diameter, hardened and ground points, knurling on body and the stem and effect on device at top for fastening end of line after winding up. Each is provided with a braided silk line. Nickel plated.

MERCURY PLUMB BOBS. PRICES FIG. 9985.

Length, Inches.	Diameter, Inches.	Weight, Oz.	Each.
4	⅝	2½	$ 60
5	⅝	3	80
5½	¾	5	1 00
6	1	16	2 50

The same designs as the Mercury Plumb Bobs, made from solid steel, the interior is omitted.

Length, Inches.	Diameter, Inches.	Weight, Oz.	Each.
4	⅝	2½	$1 75
5	⅝	3	2 00
5½	¾	5	2 50
6	1	14½	3.00

MALLEABLE IRON SCREW CLAMPS.

WITH WROUGHT IRON SCREW

F G. 9986.

PRICES FIG 9986

The adjustable washer works upon a perfect ball at the end of screw thereby conforming to a beveled surface.

Size, Inches.	Per Dozen.	Size, Inches.	Per Dozen.
2½	$2 80	7	$7 20
3	3 00	8	9 00
4	4 20	9	10 00
5	5 00	10	11 00
6	6 60	12	16 00

MALLEABLE IRON CLAMPS.

ADJUSTABLE.

FIG 9987

PRICES FIG 9987

Patent Adjustable

Size, Inches.	Per Dozen.
4	$4 50
5	6 00
6	7 50
8	9 00
10	12 00

By turning the thumb nut quarter turn the jaws may be moved to the front or back, or when turning it to the right is operated like any other screw

HEAVY PATTERN SCREW

F.G. 9988.

EXTRA HEAVY

FIG 9989

Size, Inches.
4
5
6
7

PRICES FIG. 9988

Heavy Pattern Screw

Per Dozen.	Size, Inches.	Per Dozen.
$2	6	$3 00
4 00	8	4 50
6 00	10	6 00
7 00	12	8 00

Size, Inches.
6
8

PRICES, FIG. 9989.

Extra Heavy

Per Dozen.	Size, Inches.	Per Dozen.
$11 00	10.	$13 00
15 00	12	17 00

"STAR" CARRIAGE MAKERS' CLAMPS.

F G. 9990.

DESCRIPTION, FIG. 9990.

The "Star" Clamp is made [illegible] with steel dated screw [illegible] arranged that the screw is adjusted into the Clamp, thus shifting the centre distance between the ends of the two arms.

PRICES FIG 9990

Open. in.	2½	3	4	5	6	7	8	10
Per dozen.	$3 60	$3 00	$4 20	$5 00	$6 50	$7 80	$9 00	$11 00

STANDARD CARRIAGE CLAMPS.

FIG. 9991

DESCRIPTION, FIG 9991

This Clamp is thoroughly made of the best refined malleable [illegible] is provided with a button tip. It has a very deep, square thread in both the screw and fixture

PRICES, F G. 9991

Open in.	2½	[illegible]	4	5	6	[illegible]	8	10
Per doz.	[illegible]	$3 00	$3 75	$5 00	$5 75	$6 [illegible]	$8 00	$ 9 00

THE FAIRBANKS COMPANY

BOILERMAKERS' RIVETING HAMMERS.

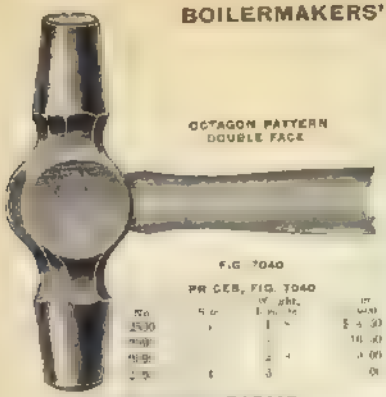


FIG. 7040

PRICES, FIG. 7040

No.	Size	Weight, Lbs.	Per Dozen
1500		1	$ 4.80
			10.80
			14.00
			19.00
			24.00

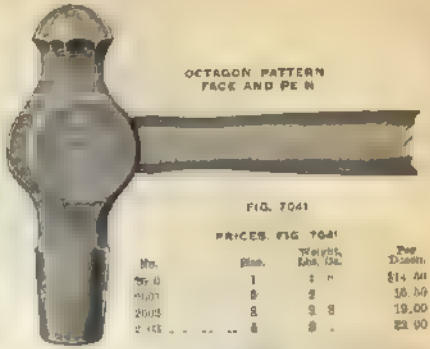


FIG. 7041

PRICES, FIG. 7041

No.	Size.	Weight, Lbs. Oz.	Per Dozen.
	1		$14.40
	2	2	16.80
2603	2	2 8	19.00
	3	3	24.00

BOILER PICKS.

SPECIAL TOOL STEEL. POLISHED POINTS

FIG. 7042

PRICE FIG. 7042.

No.	Weight, Lbs.	Per Lb.
1240.	3/4	$

BOILERMAKERS' HAMMERS.

FIG. 7043.

PRICE, FIG. 7043

No.	Weight, Lbs.	Per Lb.
110.	3 to 8	$0.60

BUTTON SETS.

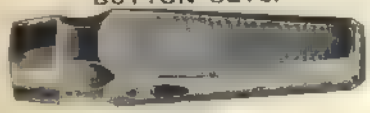


FIG. 7044

PRICES FIG. 7044

No.	Weight, Lbs.	Per Lb.	No.	Weight, Lbs.	Per Lb.
1215	3 to 5	$0.75	1216	5 and above	$0.70

BOILERMAKERS' MAULS.

FIG. 7047

These Mauls are made of the best Long Island hickory.

PRICES, FIG. 7047

No.	Size. Diameter.	Size. Length.	Per Dozen.
	6	6	$ 6.00
			8.40
		7	9.00
		7	9.60
			10.80
			12.00
			13.20
			14.40
			15.60
			16.80
			18.00
			19.20
			20.40
			21.60
			22.80
			24.00

SHIP OR BRIDGE BUILDERS' RIVETING HAMMERS.

OCTAGON PATTERN. POLISHED FACES

FIG. 7045

PRICE FIG. 7045

ROUND PATTERN. POLISHED FACES

FIG. 7046

PRICE FIG. 7046

No. 1186, length of hammer, 8½ inches, weight, 4 to 5 lbs., $0.40 per lb.

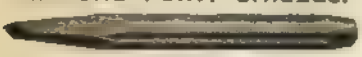
CAPE CHISELS.

FIG. 7048.

PRICES, FIG. 7048.

No.	Size of Bar, Inch.	Width of Cut, Inch.	Average Weight Per Dozen, Lbs.	Per Lb.
514	¼	⅜ to ½	18	$0 40
515	⅜	⅜ to ⅝	15½	43
516	⅜	⅜ to ¾	12	43
517	½	½ to ⅝	7½	45
518	½	½ to ¾	5	45
519	½	½ to ⅞	3	53
520	⅝	⅝ to 1	2½	53

DIAMOND POINT CHISELS.



F G. 7050

PRICES FIG. 7050

No.	Size of Bar Inch.	Average Weight Per Dozen, Lbs.	Per Lb.
528	¼	20	$0 37
529	⅜	15½	39
530	½	11½	40
531	⅝	7½	42
532	¾	4	44
533	⅞	4½	49
534	1	2½	53

HALF ROUND CAPE CHISELS.

FIG. 7049

The width of the cut is usually made about one half the diameter of the bar, that is a ½ inch bar chisel will have a cutting face about ¼ inch wide.

PRICES, FIG. 7049.

No.	Size of Bar, Inch	Average Weight Per Dozen, Lbs.	Length, Inches.	Per Lb.
521	¼	18	8½	$0 40
522	⅜	12½	8	42
523	½	9	8	42
524	⅝	6½	7	45
525	¾	4	6	47
526	⅞	3	6	52
527	1	2½	5½	53

COLD CHISELS.

F G. 7051

PRICES. FIG. 7051.

No.	Octagon Bar, Inch.	Average Weight Per Dozen, Lbs.	Per Lb.
507	¼	20	$0 30
508	⅜	15½	28
509	½	11½	33
510	⅝	7½	35
511	¾	4	35
512	⅞	3½	32
513	1	2½	33

PNEUMATIC AND HAND CHISELS.

FIG. 7052.

Flat chisel, made for machine, foundry and boiler work, ⅜ inch octagon, length, 9 inches; width of blade, 1¼ inch, ¼ inch hexagon shank.

Price, per doz. $7.20

FIG. 7054.

Groove, three quarter round, half round, quarter round cape chisel, made for machine and foundry work, ⅜ inch octagon, length 9 inches, width of blade, ½ inch, ⅜ inch hexagon shank.

Price, per doz. $8 00

FIG. 7056.

Side chisel, made for machine, foundry and boiler work, ⅜ inch octagon, length, 9 inches, width of blade, ¾ inch, ¼ inch hexagon shank.

Price, per doz. $9.60

FIG. 7058.

Caulking chisel for boiler work, ⅜ inch round, length, 9 inches, diamond point, ¼ inch round shank.

Price, per doz. $4 00

FIG. 7053.

Roughing, three quarter round, half round, quarter round, chisel for machine and foundry work, ⅜ inch octagon, length, 9 inches; width of blade, ⅝ inch; ¼ inch hexagon shank.

Price, per doz. $6.00

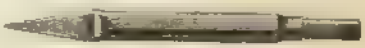


FIG. 7055.

Flat cape chisel, made for machine and foundry work, ⅜ inch octagon, length, 9 inches, width of blade, ⅝ inch, ¼ inch hexagon shank.

Price, per doz. $6 00

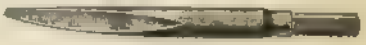


FIG. 7057.

Diamond point chisel, made for machine, foundry and boiler work, ⅜ inch octagon, length, 9 inches, diamond point, ¼ inch hexagon shank.

Price, per doz. $7 20

FIG. 7059.

Boilermakers set for finishing up chisel work, ⅜ inch octagon, length 9 inches, ¼ inch round shank.

Price, per doz. $7.20

THE FAIRBANKS COMPANY

CAULKING MALLETS.

PRICES, FIG. 7160

FIG. 7160.

		Per Dozen.
No.	000, tempered steel rings	$40 00
	00, polished steel rings	28 00
	0, polished steel rings	20 00
	1, polished steel rings	22 00
	2, polished steel rings	16 00
	3, varnished steel rings	10 00
	4, polished iron rings	8 00
	5, polished iron rings	6 00
	6, polished iron rings	4 50
	7, varnished iron rings	3 00
	8, varnished iron rings	2 50

HAWSING MALLETS.

NOT ILLUSTRATED.

	Per Dozen.
Live oak, extra	$20 00
Live oak	17 50
White oak	15 00

HAWSING IRONS.

SOLID STEEL.

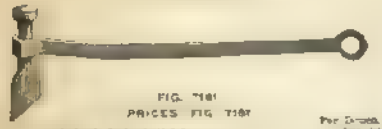


FIG. 7161

PRICES, FIG. 7161

	Per Dozen.
Blades, polished, ½ inch thick	$20 00
Blades, polished, ⅜ inch thick	15 00
Handles, steel	45 00
Handles, oak	25 00

Also ⅝ and ¾ inch stock furnished at same prices

REAMING IRONS.

FIG. 7162

PRICE, FIG. 7162

Solid steel.

Per dozen $5 00

WIRE ROPE MARLINE SPIKES.

PRICES, FIG. 7163.

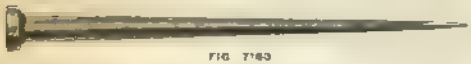


FIG. 7163

Solid cast steel. Forged from the bar. Full polished.

Size, inches.	12	14	16	18	20
Per dozen	$3 00	$5 00	$7 00	$9 00	$12 00

MARLINE SPIKES.

FIG. 7164.

PRICES, FIG. 7164.

STEEL POINTS POLISHED.

Size, inches.	8	10	12	13	15	14	15	16	18
Per dozen	$3.50	$4.00	$4.50	$5.00	$5.50	$6.50	$7.50	$9.00	$13 50

JAPANNED

Size, inches.	8	10	12	13	14	15	16	18
Per dozen	$2.00	$2.50	$3.25	$3.50	$4.00	$5.00	$6.50	$8.50

SHIP SCRAPERS.

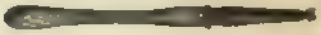


FIG. 7165.

FIG. 7166

FIG. 7167.

PRICES, FIGS. 7166 TO 7167

Wood handles, wrought iron sockets.

	Per Dozen.
No. 1, blades ¼ inch thick, iron and steel welded	$7 50
No. 2, blades from No. 14 cast steel	5 50
No. 3, blades from No. 14 steel, black sockets	3 50
No. 4, blades from No. 14 steel 2½ inches square	4 50
No. 5, blades from No. 14 steel, 3 foot handle	9 00

HOLLOW BELAYING PINS.

GALVANIZED IRON AND BRASS.

FIG. 7168.

PRICES, FIG. 7168.

No.	Diam. of Pin, inches.	Length of Head, inches.	Distance from Angle to Bend, inches.	Galvanized Per Dozen.	Plain Brass, Per Dozen.	Polished Brass, Per Dozen.
½	½	5	6	$3 00	$4 00	$5 00
	⅝	5½	6	3 50	4 50	6 00
	¾	6	7	4 00	5 00	6 00
	⅞	6½	7½	5 00	6 00	8 00
	1	7	8	6 00	8 00	10 00
0	1	7½	8½	7 00	9 00	12 00
1	1	8	9	8 00	10 00	13 00
2	1	8½	9½	9 00	11 00	14 00
3	1	9	10	10 00	12 00	15 00

WOOD BELAYING PINS.

NOT ILLUSTRATED.

Inches	1	1¼	1½
Hickory, per dozen	$0 65	$0 65	$0 75
Locust, per dozen	1 00	1 00	1 25

THE FAIRBANKS COMPANY

PLANISHING HAMMERS.

POLISHED FACE.

ROUND FACE.

FIG. 7149.

SQUARE AND ROUND FACE.

FIG. 7150.

PRICES, FIGS. 7149 AND 7150.

1 to 4 lb. each $0 90

Over 4 lb., per lb. .....

COPPERING HAMMERS.

NOS. 1 AND 2

FIG. 7147.

NOS. 3 AND 4

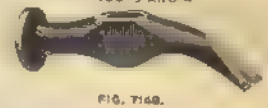


FIG. 7148.

PRICES, FIGS. 7147 AND 7148

No.	Per Doz.	No.	Per Doz.
1, cast steel	$8 50	3, cast steel, heavy	$
2, German steel....	7 00	4, German steel, heavy..	

Handled extra, per dozen 50

Prices do not include handles.

COPPERING PUNCHES.

FIG. 7156

PRICE, FIG. 7161

Best cast steel polished, per dozen $1 50

SHIP OR TOP MAULS.

FIG. 7163.

PRICES, FIG. 7162

Cast steel.

No. 1560, painted line, polished faces, per lb. .....

No. 15[illegible] Union .....

No. [illegible] ted [illegible] and line .....

PITCHING TOOLS.

PRICES, FIG. 7163

No. 1[illegible] pick head, per lb $0 50

No. 1[illegible] ine lot head, per lb 60

PLAIN HEAD.

FIG. 7163

CAULKING OR MAKING IRON.

FIG. 7154

CAULKING IRONS.

DECK OR DUMB IRON.

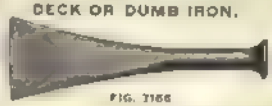


FIG. 7156

CROOKED OR BENT IRON

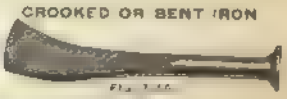


FIG. 7155

SPIKE IRON

FIG. 7157

CLEARING OR REEFING IRON

FIG. 7158

SHARP OR BUTT IRON.

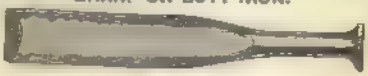


FIG. 7159

PRICES FIGS. 7154 TO 7159

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible] per dozen	[illegible]	No. 1 crease, double beat horns, per dozen	$ 6 25
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible] per [illegible]	[illegible]	[illegible]	[illegible]

YANKEE THREE QUARTER OR MINERS' HANDLED AXE.

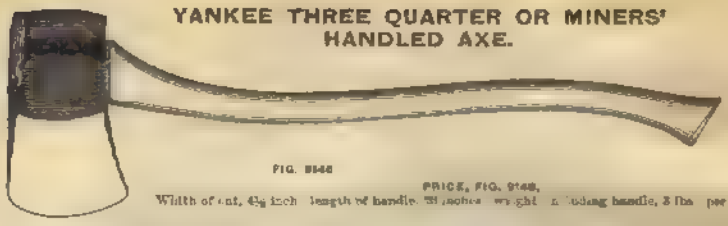


FIG. 9146

PRICE, FIG. 9146.

Width of cut, 4½ inch length of handle, 28 inches weight including handle, 3 lbs per dozen, $8 00

DERRICK HATCHET.

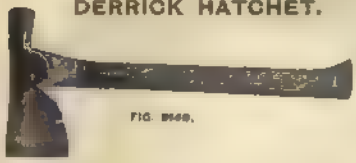


FIG. 9149.

PRICE, FIG. 9149.

Bloods, made in one size only per dozen. $5 50

AXE PATTERN HATCHET.

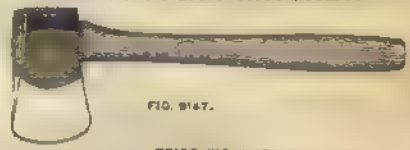


FIG. 9147.

PRICE, FIG. 9147.

No 2, with 13 inch handle weight including handle, 2½ lbs 8¼ inch cut per dozen $3 00

CLAW HATCHETS.

FIG. 9 48.

PRICES, FIG. 9148.

No.	Size.	Weight, Lbs. Oz.	Bit, Inches.	Per Dozen.
[illegible]	1	1 5	8¼	$9 00
[illegible]	5	1 9	4	9 50
[illegible]	5	1 10	4¼	10 00

WAREHOUSE HATCHETS.

FIG. 9149.

PRICE, FIG. 9149

No.	Weight, Lbs. Oz.	Bit, Inches.	Per Dozen.
850	3 14	3½	$15 00

These weights do not include handles.

BOX HATCHETS.

FLORIDA PATTERN, FULL POLISHED

FIG. 9150.

PRICE, FIG. 9150.

No.	Weight, Oz.	Bit, Inches.	Per Dozen.
636	18	3½	$9 00

PRICES FIG. 9151

No	634	635	636	637	638
Size	2-0	0	1	3	3
Weight	10 oz.	13 oz.	14 oz.	1 lb	1 lb 2 oz.
Bit Inches	2½	2¾	2⅝	2⅛	8½
Per dozen	$7 50	$8 00	$8 50	$9 00	$9 50

These weights do not include handles.

BARREL HATCHETS.

IMPROVED PATTERN, PATENT NAIL SLOT.

FIG. 9151

STRAPPED MINERS' PICKS.

CANADIAN PATTERN

FIG. 9152

REGULAR PATTERN

FIG. 9153

DESCRIPTION, FIGS. 9152 AND 9153.

Finished. Special eye. Best cast steel points. Average length, 28 inches. Average weight, exclusive of handle, 5 pounds.

PRICES, FIGS. 9152 AND 9153.

Handled, per dozen..... $.. .. Extra straps and rivets, per dozen ..... $..

EYELESS STEEL PICKS.

ONE PIECE OF STEEL.

FIG. 9154.

DESCRIPTION, FIG. 9154.

We are prepared to furnish Eyeless Picks in the following styles: Railroad or Clay Picks, Double Diamond or Contractors' Picks, V Tamping Picks, T Tamping Picks, Anthracite Coal Picks, Anthracite Mining Picks, Copper and Iron Mining Picks, Drifting Picks, Bituminous Bottom Picks, Bituminous Mining Picks, Anthracite Bottom Picks and Locomotive Coal Picks.

Weights and prices on application.

FIREMEN'S AXES.

SPUR OR PICK POINT.

FIG. 9155

PRICES, FIG. 9155.

No. 2000. Extra quality handles, axes and handles painted red. Weight, 4½ to 5 pounds. Per dozen. $36 50

No. 2150. Regular axe finish, painted red. Weight, 4½ to 5 pounds. Per dozen. 35 00

Above weights do not include handles.

ICE AXE.

REGULAR AXE FINISH. PAINTED RED.

FIG. 9156.

PRICE, FIG. 9156.

No. 2750. Weight, 2 lbs. 8 oz. Per dozen . $30 00

Weight does not include handle.

ICE HATCHET.

SOLID CAST STEEL.

FIG. 9157

PRICE, FIG. 9157.

No. 360. Weight, 1 lb. Per dozen . $20 00

FIREMEN'S HATCHET.

FIG. 9158.

PRICE, FIG. 9158.

No. 873. Weight, 1 lb. Per dozen.. .. $15 00

Above weights do not include handles.

ENGINEERS' HAMMERS.

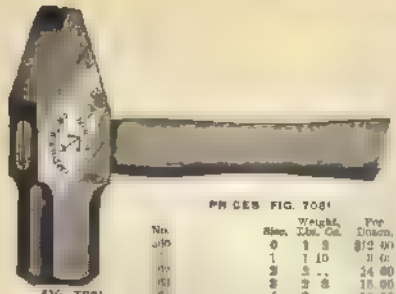
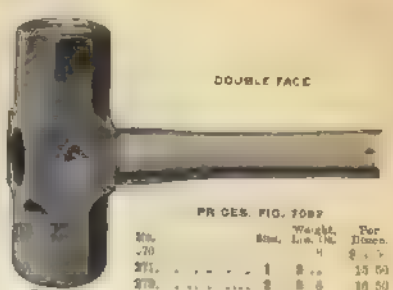


FIG. 7081

PRICES FIG. 7081

No.	Size.	Weight, Lbs. Oz.	Per Dozen.
2850	0	1 8	$12 00
	1	1 10	13 00
	2	2 ..	14 00
	3	2 8	15 00
	4	3 ..	16 00
	5	3 8	17 00
	6	4 8	19 00

Weights do not include handles.



DOUBLE FACE

FIG. 7082

PRICES. FIG. 7082

No.	Size.	Weight, Lbs. Oz.	Per Dozen.
2870		4	$ ..
2871	1	3 ..	15 00
2872	2	3 8	16 50
2873	3	4 ..	18 00
2874	4	4 10	19 50

Weights do not include handles.

BLACKSMITHS' HAND HAMMERS.

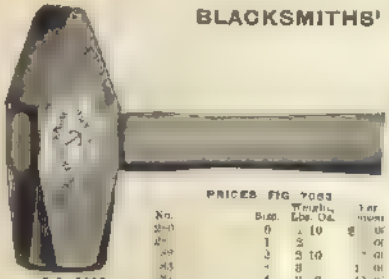


FIG. 7083.

PRICES FIG. 7083

No.	Size.	Weight, Lbs. Oz.	Per Dozen.
2840	0	1 10	$ 00
2841	1	2 ..	00
2842	2	2 10	00
2843	3	3 ..	00
2844	4	3 8	00
2845	5	4 ..	00

Weights do not include handles.

FIG. 7084

PRICES, FIG. 7084.

No.	Weight, Lbs.	Per Lb.
1130	under 3	$0 50
1100	3 to 5	.40

ENGLISH PATTERN

FIG. 7085

PRICES, FIG. 7085

No.	Weight, Lbs.	Per Lb.
2080	under 3	$0.50
2090	3 to 5	.40

BLACKSMITHS' SLEDGES.

DOUBLE FACE.

FIG. 7086.

PRICES, FIG. 7086.

No.	Weight, Lbs.	Per Lb.
1900	under 3	$0 50
1910	3 to 5	40
1920	5 and over	30

PRICES FIG. 7087

No.	Weight, Lbs.	Per Lb.
1030	under 3	$0 .0
0040	3 to 5	40
1050	5 and above	30

PRICES FIG. 7088

No.	Weight, Lbs.	Per Lb.
1940	under 3	$ .0
1950	3 to 5	40
1960	5 and over	30

CROSS PEIN

FIG. 7087

STRAIGHT PEIN

FIG. 7088

HORSESHOE TURNING SLEDGES.

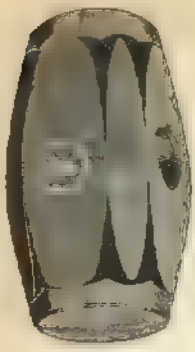


FIG. 7089.

PRICE, FIG. 7089.

No.	Weight, Lbs.	Per Lb.
1070	6 to 10	$0.40

BLACKSMITHS' SLEDGES.

WESTERN PATTERN.

FIG. 7090.

PRICE, FIG. 7090.

No.	Weight, Lbs.	Per Lb.
2510	6 to 15	$0.30

NEW ENGLAND PATTERN.

FIG. 7091.

PRICES FIG. 7091.

No.	Weight, Lbs.	Per Lb.
1050	under 3	$0.50
1050	3 to 5	.40
1050	5 and above	.30

NEVADA PATTERN.

FIG. 7092.

DRILLING OR STRIKING HAMMERS.

PRICES, FIGS. 7092 AND 7093.

Nevada Pattern, No.	Oregon Pattern, No.		Weight, Lbs.	Per Lb.
860	870	Polished faces, finished	under 3	$0.50
860	870	Polished faces, finished	3 to 5	.40
860	870	Polished faces, oil finished	5 and above	.30
861	871	Polished faces, oil finished and handled	under 3	.60
861	871	Polished faces, oil finished and handled	3 to 5	.50
861	871	Polished faces, oil finished and handled	5 and above	.40
863	873	Full polished	under 3	.60
863	873	Full polished	3 to 5	.50
863	873	Full polished	5 and above	.40
863	873	Full polished and handled	under 3	.70
863	873	Full polished and handled	3 to 5	.60
863	873	Full polished and handled	5 and above	.50

OREGON PATTERN

FIG. 7093.

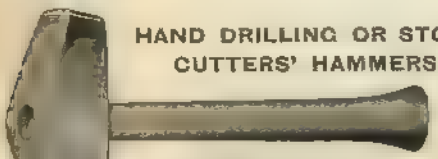


FIG. 7094.

HAND DRILLING OR STONE CUTTERS' HAMMERS.

PRICES, FIG. 7094.

No.	Extra quality crucible gunmet steel. Full polished and handled. Weight, Lbs.	Per Doz.	No.
2431	3	$ 6.00	900
2431	3½	7.50	
2431	4	13.00	900
2431	4½	20.50	
2431	5	28.00	900

NAPPING HAMMERS.

PRICES, FIG. 7095.

Weight, Lbs.	Per Lb.
under 3	$0.50
3 to 5	.40
5 and above	.30

FIG. 7095.

THE ENTERPRISE MFG. COMPANY

MACHINISTS' HAMMERS.

OCTAGON PATTERN

BALL PEEN

FIG 7076

PRICES FIG 7076.

No.	Size	Weight Lbs. Oz.	Per Doz.
3	3000	5	$ 4 00
3½	000	6	4 00
4	00	8	4 00
4½	0	9	4 00
5		1	2 00
5½	1	4	3 00
6	2	1 8	4 00
6½	3	1 13	5 00
7	4	2	10 00
7½	5	2 4	17 00
8	6	2 8	18 00
8½	7	2 13	20 00
9	8	3	15 00
9½	9	3 8	24 00

PRICES, FIG 7077

No.	Size.	Weight, Lbs. Oz.	Per Doz.
3000	000	6	$13 00
00	00	8	13 00
000	0	10	13 00
0	1		12 00
1	1	4	13 50
2	1	8	14 00
3	1	13	15 00
4	2		16 50
5	2	4	17 00
6	2	8	18 00
7	2	13	20 00
8	3		22 00
9	3	8	24 00

STRAIGHT PEIN

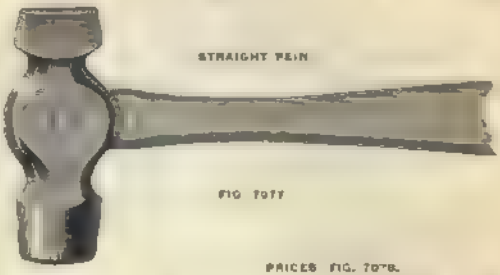


FIG 7077

CROSS PEEN

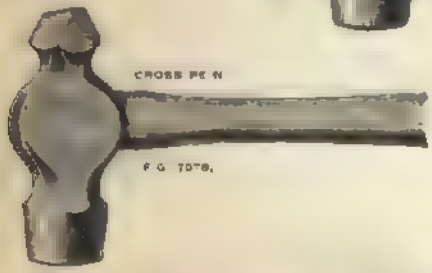


FIG 7078.

PRICES FIG. 7078.

No.	Size.	Weight, Lbs. Oz.	Per Doz.
41	0000	6	$ 3 00
4½	000	8	3 00
4⅝	00	10	3 00
4¾	0		3 00
4⅞	1	1 4	3 00
4¾	2	1 8	4 00
4	3	1 13	5 00
4	4	2	16 00
3 7	5	2 4	17 00
4	6	2 8	18 00
4	7	2 13	20 00
4	8	3	22 00
4	9	3 8	24 00

RIVETING HAMMERS.

PLAIN EYE

FIG 7079.

PRICES, FIG. 7079.

No.	Size.	Weight, Lbs. Oz.	Per Doz.
00	D	4	$5 00
0	1	7	5 70
2	2	9	6 00
4	H	12	6 25
4	4	15	5 80
5	5	1 9	7 00
6	6	1 6	7 80
7	7	1 10	8 00

CHIPPING HAMMERS.

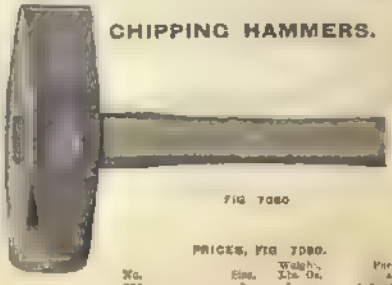


FIG 7080

PRICES, FIG 7080.

No.	Size.	Weight, Lbs. Oz.	Per Doz.
300	0	1	$ 3 50
301	1	1 4	4 00
302	2	1 8	5 00
303	3	2	6 00
304	4	2 8	7 50
305	5	2 14	10 50

All above weights do not include handles

THE FAIRBANKS COMPANY

PROSPECTING HAMMERS.

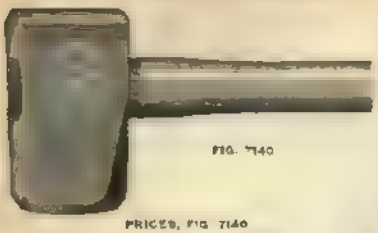
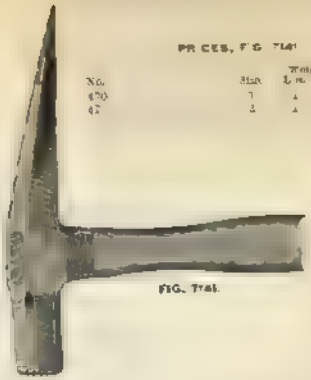


FIG. 7140

PRICES, FIG. 7140

No.	Size.	Weight. Lbs.	Oz.	Per Dozen.
3[illegible]	0	1		$[illegible]
3[illegible]	1	1	8	[illegible]
3[illegible]	2	2	12	15 00
3	3	3		18.00

PROSPECTING PICKS.



PRICES, FIG. 7141

No.	Size.	Weight. Lbs.	Oz.	Per Dozen.
4[illegible]	1	1		$[illegible] 00
4[illegible]	2	1	8	16 00

FIG. 7141.

ADZE EYE BRICK HAMMERS.

FIG. 7142.

PRICES, FIG. 7142

No.	Size.	Weight. Lbs.	Oz.	Per Dozen.
46	0	1	2	$[illegible]
461	1	1	8	[illegible]
462	2	2		[illegible] 00
463	3	2	8	[illegible].00

PLAIN EYE BRICK HAMMERS.

PHILADELPHIA PATTERN.

FIG. 7143.

PRICES FIG. 7143.

No.	Size.	Weight. Lbs.	Oz.	Per Dozen.
2570	1	1	8	$11.00
2571	2	2	-	13.00
2572	3	3	8	18.00

PLAIN EYE BRICK HAMMERS.

CHICAGO PATTERN, OIL FINISHED

FIG. 7144

PRICES, FIG. 7144

No.	Size.	Weight. Lbs.	Oz.	Per Dozen.
[illegible]	1	1	[illegible]	$[illegible]
[illegible]	2	2	[illegible]	[illegible]
[illegible]	3	[illegible]	[illegible]	[illegible]

[illegible]

PLAIN EYE BRICK HAMMERS.

BOSTON PATTERN.

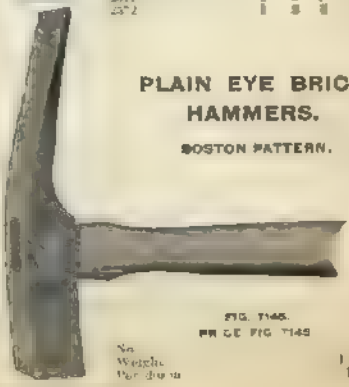


FIG. 7145.

PRICES FIG. 7145

No.	2690
Weight	[illegible] lbs. 4 oz.
Per Dozen	$[illegible] 00

THE FAIRBANKS COMPANY

WOODCHOPPERS' MAULS.

TRUCKEE PATTERN.

FIG. 7131.

PRICE FIG. 7131

No. 1330, weight 5 lbs. and above, per lb... $0 26

STRAIGHT CUT

FIG. 7132.

PRICE FIG. 7132

Axe finish, painted blue solid cast steel.

No. 1340, weight 5 to 12 lbs., per lb..... $0 28

SAW WEDGES.

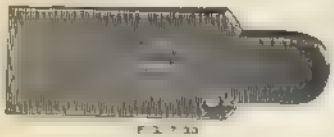


FIG. 7133.

PRICE FIG. 7133.

Solid cast steel, oil finish

No. 3010, weight 1¼ to 3 lbs. per lb. $0 30

WEDGES.

OREGON PATTERN

FIG. 7134.

PRICE FIG. 7134.

Oil tempered cast steel

No. 1440 weight 4 to 20 lbs. per lb $0 26

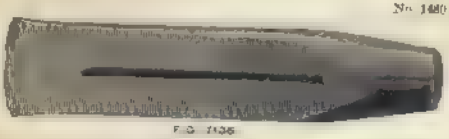


FIG. 7135.

WEDGES.

PRICE, FIG 7135.

Forge finished and oiled.

No. 1500, weight 3 to 10 lbs., per lb.. $0 30

WEDGES.

PRICES, FIG 7138

Polished and painted red

No. 1810, weight under 2 lbs., per lb $0 35

" 1810, weight 2 to 5 lbs., per lb 2[illegible]

" 1510, weight 5 to 10 lbs., per lb 2[illegible]

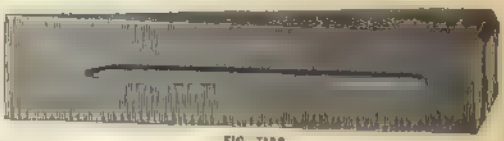


FIG. 7138.

FIG. 7137.

COAL SLEDGES.

PRICES, FIG 7137.

No. 1030, weight 3 to 5 lbs. per lb... $0 40

" 1050, weight 5 lbs. and above, per l 30

ANTHRACITE COAL WEDGES.

OCTAGON PATTERN

FIG. 7136

PRICE, FIG. 7136

No. 2470, weights 1½ to 3 lbs., per lb. $0.30

COAL WEDGES.

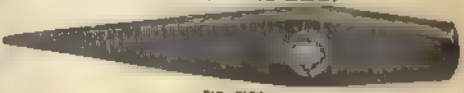


FIG. 7139

PRICE, F.G. 7139.

Solid cast steel, oil finished

No. 1330, weight 1¼ to 3 lbs., per l[illegible] $0 35

RAILROAD TRACK WRENCHES.

SOLID CAST STEEL, FLAT OR ROUND HANDLES.

PRICE FIG. 8339

No. 1510, 20 inches, per lb. $0.30

FIG. 8339

RAIL FORK.

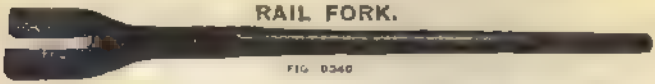


FIG. 8340

PRICE, FIG. 8340
No. 19, per lb. $0.30

RAIL TONGS.

SOLID CAST STEEL.

PRICE FIG. 8341

No. 1520, weight, 13 lbs., per lb. ... $0.30

FIG. 8341

TIE TONGS.

SOLID CAST STEEL.

PRICE, FIG. 8342
No. 1601, weight, 18 pounds, per lb. .$0.30

FIG. 8342

SPIKE PULLERS.

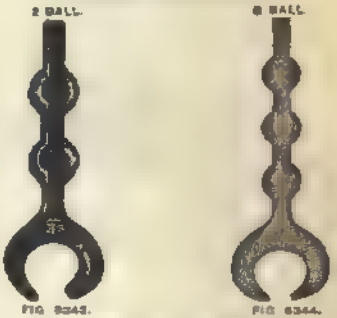


FIG. 8343. FIG. 8344.

DESCRIPTION, FIGS. 8343 AND 8344.

These tools [illegible] any jaw [illegible] Lifter [illegible] of [illegible] bar. They are made of [illegible] steel, carefully hammered and are light tough and durable.

PRICES FIGS. 8343 AND 8344.

2 ball, each $0.60
3 ball, each 1.10

PEARSON CYCLONE SPIKE PULLER.

FIG. 8345.

DESCRIPTION, FIG. 8345.

The [illegible] and handle are cast steel. The jaws are drop forged from the [illegible] steel. The other working parts are of the best [illegible] steel, and the tubing is of the best gauge bicycle tubing.

SIZES OF SPIKES REMOVED.

The opening of the jaws measures from ¼ inch when shut to ⅝ inch when open, therefore it is readily seen that the Puller will pull any spike used in ordinary practice.

PRICE, FIG. 8345.

Each... [illegible] $15.00

TIE PEAVEY.

FOR HANDLING RAILROAD TIES.

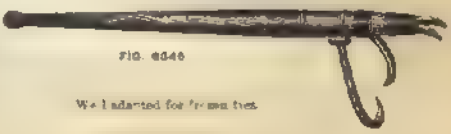


FIG. 8346

We [illegible] adapted for [illegible] ties.

PRICE FIG. 8346

Per dozen $93.50

RAILROAD MAULS.

PITTSBURGH PATTERN

FIG. 6347

PRICE FIG. 6347

No. 2700, weight 8 to 12 lbs. per lb . . $0 40

PRICES, FIG. 6349.

No. 1570, oil finished, polished faces, 8 to 12 lbs., per lb. . . . . $0 [illegible]

No. 157 [illegible] polished [illegible] per [illegible]

No. 1572, fast polished [illegible] handle, 8 to 12 lbs., per lb. [illegible]

SOLID CAST STEEL

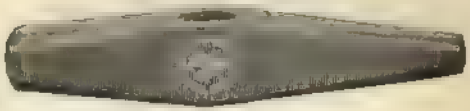


FIG. 6348.

TRACK CHISEL.

CALVERY PATTERN

F.G. 6349

PRICE, F.G. 6349

No. 1A, per lb. . . . . $0 [illegible]

F.G. 6350

PRICE F.G. 6350

No. 1, per lb. . . . . $0 [illegible]

TRACK CHISEL.

FIG. 6351

Extra long for high rail.

PRICE F.G. 6351

No. 1B, per lb. . . . . $0 [illegible]

TRACK PUNCH.

FIG. 6352.

Round point if desired

PRICE FIG. 6352

No. 1, per lb. . . . . $0 [illegible]

TIE PLUG PUNCH.

PRICE FIG. 6353

No. 18A, per lb. . . . . $0 [illegible]

F.G. 6353.

RATCHET TRACK DRILL BIT.

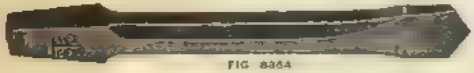


FIG. 6354

Made of steel especially adapted in quality and temper to drilling rails

PRICE, F.G. 6354

Each . . . . . $0 [illegible]

TRACK WALKERS' HAMMER.

PRICE, FIG. 6355

No. 23, per lb. . . . . $0 [illegible]

FIG. 6355

FARRIERS' HAMMERS.

ADZE EYE
OCTAGON POLL

FIG. 7181
PRICES, FIG. 7181.

No.	Size.	Weight, Oz.	Per Dozen
1	2	10	$7 [illegible]
1½	3	7	5 50

ADZE EYE
ROUND POLL

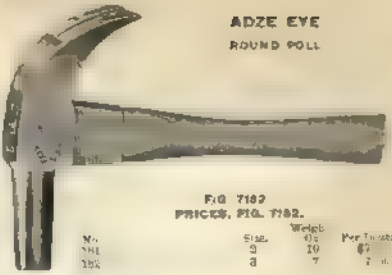


FIG. 7182
PRICES, FIG. 7182.

No.	Size.	Weight, Oz.	Per Dozen.
1½	2	10	$6 [illegible]
1½	3	7	7 [illegible]

PLAIN EYE.
ROUND POLL.

FIG. 7183.
PRICE, FIG. 7183

No.	Weight, Oz.	Per Dozen.
1½	7	$9 25

PLAIN EYE
OCTAGON POLL

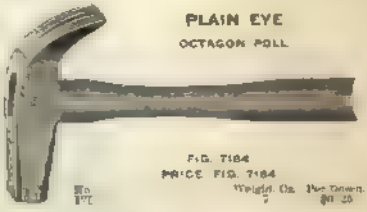


FIG. 7184
PRICE, FIG. 7184

No.	Weight, Oz.	Per Dozen.
1½	7	$9 25

HORSESHOE TURNING HAMMERS.

CHICAGO PATTERN

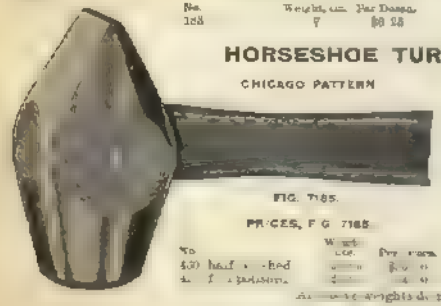


FIG. 7185.
PRICES, FIG. 7185

No.	Weight, Oz.	Per Dozen.
430	half [illegible] -head	[illegible]
4	[illegible] pattern	[illegible]

All [illegible] weights do not include handles.

NEW YORK PATTERN

FIG. 7186.
PRICE, FIG. 7186.

No.	Weight, Oz.	Per Dozen.
[illegible]	5 to 8	[illegible]

FARRIERS' BUTTRESSES.

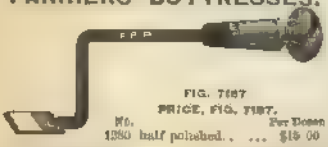


FIG. 7187
PRICE, FIG. 7187.

No.	Per Dozen
1380 half polished. .	$15 00

TOE KNIVES, FOR HORSESHOERS.

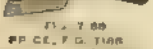


FIG. 7 88
PRICE, FIG. 7188

BUFFERS

FIG. 7 89
PRICE FIG. 7189.

ENGLISH FARRIERS' HAMMERS.

OCTAGON PATTERN

FIG. 7190
PRICE, FIG. 7190.

No.	Weight Oz.	Per Dozen.
0	10	$10 50

Weight does not include handle.

THE FAIRBANKS COMPANY

ROCK DRILL SHARPENING TOOLS.

HAMMER EXTRA TOOL STEEL.

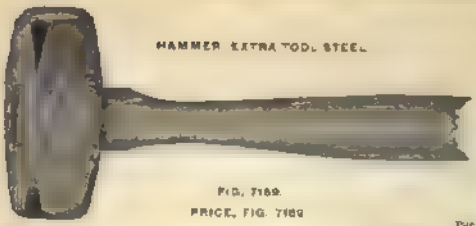


FIG. 7169.

PRICE, FIG. 7169

No.	Weight.	Per Dozen
2489	4 lb. 8 oz.	$36 00

Weight does not include handle.

DOLLY NO. 2100.

FIG. 7170.

DOLLY NO. 2101

FIG. 7171.

PRICES, FIGS. 7170 AND 7171

No. 2100, weight 4 lbs. per [illegible]	$1 80
2101, weight 6 lbs. per lb.	80

SET HAMMER

FIG. 7172.

PRICE, FIG. 7172.

No. 2105, wgt. 3 lbs. 8 oz. per lb.	$1 80

PRICE, FIG. 7173.

No. 2106, wgt. 3 lbs. 8 oz., per lb.	$0 90

TOP SPREADER

FIG. 7173

BOTTOM SPREADER.

FIG. 7174.

PRICE, FIG. 7174

No. 2104, wgt. 3 lbs. 4 oz., per lb.	$1 40

PRICE, FIG. 7175

No. 2104, wgt. 6 lbs. 12 oz., per lb.	$0 80

SOW

FIG. 7176

GRANITE WORKING PLUG DRILLS.

FIG. 7176

PRICES, FIG. 7176

Made of Black Diamond quarter octagon tool steel, [illegible] per lb. $1 00

Made of Hawk Brand quarter octagon tool steel, [illegible] per lb. 1 25

STAR DRILLS.

FOR BRICK, CONCRETE OR STONE

NO. 30

FIG. 7178

PRICES, FIG. 7178

Made of Spear tool steel. Made as follows and sizes:

Size inches	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] per dozen	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	per dozen	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	per hundred	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

MINERS' SPOONS.

FIG. 7177

No. 1888, made of ⅝ inch round steel, length 3 feet, per dozen $12 00

PLUGS AND FEATHERS,

OR WEDGES AND SHIMS

FIG. 7180

SCRAPERS, DOUBLE END.

FIG. 7179

No. 1881, made of [illegible] octagon steel, length 6 feet, per dozen [illegible] $18 00

PRICES, FIG. 7180

WEDGES

	1	2	3	4	5	6	7
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cast steel	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Per	$0 10	$0 10	$0 15	$0 25	$0 35	$0 45	$0 55

SHIMS

No.	1	2	3	4	5	6	7
To be used with	No. 1 wedge	No. 2 wedge	No. 3 wedge	No. 4 wedge	No. 5 wedge	No. 6 wedge	No. 7 wedge
Per lb.	$0 [illegible]	$0 15	$0 15	$0 20	$0 15	$0 15	$0 [illegible]

We also furnish a wedge expressly for plugging. Cut shown in cut, thicker at the point and less taper. Price same as No. 6.

STONECUTTERS' HAMMERS.

PRICES FIG. 7098

No. 890, polished faces, oil finished, weight under 3 lbs. per [illegible] $0 75
" 891, polished faces, oil finished, weight 3 to 5 lbs. [illegible] 70
" 892, polished faces, oil finished, handled, weight under 3 lbs. [illegible] 65
" 893, polished faces, [illegible] weight 3 to 5 lbs. inclusive, per lb. 60
" 894, full polished, weight under 3 lbs. per lb. 65
" 895, full polished, weight 3 to 5 lbs. inclusive, per lb. 60
896, full polished and handled, weight under 3 lbs., per lb. 75
897, full polished and handled, weight 3 to 5 lbs. inclusive, per lb. 70

FIG. 7026.

STONE SLEDGES.

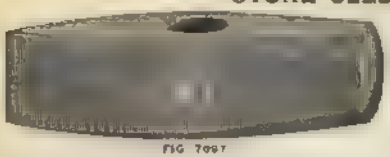


FIG. 7097

PRICES, FIG. 7097

No. 930, weight under 3 lbs., per lb. $0 40
" 931, weight 3 to 5 lbs. per lb 40
" 932, weight 5 lbs. and above, per lb 30

FLAT FACE STONE SLEDGES.

PRICES FIG. 7098.

No. 9[illegible]5, weight under 3 lbs. per lb. $0 50
" 9[illegible]6, weight 3 to 5 lbs., per lb. 40
" 9[illegible]7, weight 5 lbs. and above, per lb 30

FIG. 7098

FIG. 7099

STONE AXES.

PRICES, FIG. 7099.

No. 940, weight under 3 lbs. per lb $0 [illegible]
941, weight 3 to 5 lbs. [illegible] per lb [illegible]

SPALLING OR STONE HAMMERS.

DOUBLE FACE

FIG. 7100.

PRICES, FIG. 7100.

No. 960, weight under 3 lbs., per lb. $0 50
" 961, weight 3 to 5 lbs., per lb 50
" 962, weight 5 lbs. and above, per lb 40

SINGLE FACE

FIG. 7101

PRICES, FIG. 7101.

No. 950, weight under 3 lbs. per lb. $0 [illegible]
" 951, weight 3 to 5 lbs. [illegible] 50
" 952, weight 5 lbs. and above, per lb 40

MASONS' HAMMERS.

BRONZED, AXE FINISH

FIG. 7102.

PRICES, FIG. 7102.

No. 970, weight under 3 lbs. per lb. $0 60
" 971, weight 3 to 5 lbs., per lb. 55
" 972, weight 5 lbs. and above, per lb 50

BRONZED, AXE FINISH, WITH TEETH.

FIG. 7103.

PRICES, FIG. 7103

No. 980, weight under 3 lbs. per lb., $0 65
" 981, weight 3 to 5 lbs., per lb. 60
" 982, weight 5 lbs. and above, per lb 55

STONE BREAKING HAMMERS.

FIG. 7104

PRICE FIG. 7104.

No. 2080, weight 5 lbs. and above, per lb. $0 10

STONE WEDGES.

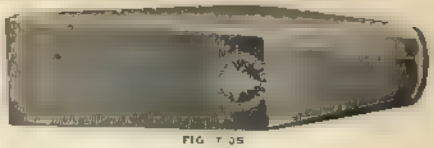


FIG. 7105

PRICE F G 7105.

Solid cast steel forged finished and oiled

No. 1820, weight 2 to 5 lbs., per lb $0 35

QUARRY PICKS.

F G. 106

PRICE F G 7106

Solid cast steel oil finished

No. 2180, weight 3 to 5 lbs., per lb. $0 40

STONE PICKS.

F G. 7107

PRICE FIG. 7107

Solid cast steel polished points.

No. 1700 weight 3 to 5 lbs. per lb $0 40

STONECUTTERS' POINTS.

PLAIN AND MALLET HEADS.

F G. 7 08. MALLET HEAD.

PRICES FIG. 7108.

No. 1400, plain head, per lb $0 70

No. 1410, mallet head, per lb 6[illegible]

STONECUTTERS' CHISELS.

PLAIN AND MALLET HEADS.

MALLET HEAD.

FIG. 7109.

PRICES, FIGS. 7109 AND 7110.

No. 1430 plain head, per lb $0 70

" 1435 plain head, with teeth per lb 6[illegible]

" 1440 mallet head, per lb 6[illegible]

" 1450, mallet head with teeth, per lb. 6[illegible]

MALLET HEAD, WITH TEETH

FIG. 7110

BUSH HAMMERS.

WITH EXTRA TOOL STEEL LEAVES.

FIG. 7113

PRICE, FIG. 7111.

Machine cut teeth

No. 1000, weight 2 to 6 lbs., per lb. . $1 00

BUSH HAMMERS.

FIG. 7111

PRICES FIG. 7112.

No.	Face	Jaws Open, Inch.	Weights, Lbs.	Oz.	Simple, Each.
2020	6	5/8	5	8	$2[illegible]
2030	4	2[illegible]	7		2[illegible]
2040	2	1[illegible]	7	8	3[illegible]
[illegible]	3	[illegible]	[illegible]	8	[illegible]
[illegible]	4	1[illegible]	9	8	[illegible]
[illegible]	5	1	10	8	[illegible]

MILL PICKS.

FIG. 7112.

PRICE F.G. 7112

Special cast steel pointed [illegible] points

No. 790 weight [illegible] lbs. per 1 $0 75

THE FAIRBANKS COMPANY

IMPORTED PAPIER MACHE ANIMALS.

The genuine goods, almost unbreakable. Chalk dropped on them and rubbed with sponge.

F3380 ... each ... Doz. ...

sheep, etc., about 2¾ in. 1 doz. in flat box. Doz. 27c

F3381 ... Doz. 40c

F3382 ... 3380, 5 in. *Size 10 centers.* ¼ doz. in box. Doz. 97c

Asstd. Animals—Glazed Finish.

F3383—6 styles, horses, sheep, pigs, elephants, etc., painted in colors. Average size 4½ in. Doz. 40c

F3384—Wild and domestic animals in flat display box, 12x21½, green flocked to represent grass ... Doz. 75c

PAPIER MACHE ANIMALS.

Big value to come

F3385 Asstd. 6 styles, painted horses, painted wood platforms, iron wheels; donkeys, horses, deer, etc. Average 6½ in. long. 1 doz. in box. Asstd. Per dozen. **87c**

HARDENED PAPIER MACHE HORSES.

Made of layers of paper which have been pressed through a hardening process.

... 4 Wheel Platforms. ... wooly mane and tail, fancy colored paper blanket. Platform 13x24 in. 1 doz. in box ... Doz. 81c

... Asstd. Leather Trappings. ... Doz. $2.20

F3411 Assorted Leather Trappings. ... Doz. $3.85

On Rockers.

... Doz. 43c

... Doz. 83c

... Doz. $2.00

F3426. Horse with Cart. Horse with wooly mane and tail, painted in ... Doz. 95c

F3429. With Assorted styles of 2 wheel carts, some gray horses, wool mane and tail, on 4 wheel platforms, painted in bright colors. ... about 11½ in. ... ¾ doz. in box. Asstd. Doz. $2.00

IMPORTED PAPIER MACHE HORSE WITH RIDER.

F3430—Wooly mane and tail, jockey in fancy costume, flat top 11½x3½ ... Doz. $2.25

... 11¼ in. ... ¾ doz. in box. ...

... Doz. $2.25

... Doz. $4.10

F3368—As F3360 ... chromo head piece, ...

GALLOPING DOGS.

On wire frames with four steel handles.

F3449—Mechanical, runs on three wheels, 15 in. overall. Dog of short, curly wool, jumps when run over the floor. 1 doz. in box. Doz. 83c

F3450—As F3449, length of dog 20 in., larger wheels, wire frame, 19x9½. ¾ doz. in box. Doz. $1.95

IMPORTED NODDING HEAD ANIMALS.

Asstd. styles, each on 4 wheel platform

F3385, F3387, F3388.

F3386 Asstd. horses and donkeys, about 3½x4¾. 1 doz. in box. ... Doz. 40c

F3387 Assorted ... deer, camels, spotted horses, donkeys and cows in box of 1 doz. ... Doz. 79c

F3388, "Leader" Line Asst.—Extra size and ... as above, plus ... 8½ in. high. 1 doz. in box. Doz. 89c

F3393 ... stools, fancy ... chairs, on rockers, 7½ in. high. 1 doz. in box. Doz. $2.10

F3398—Clown Donkeys and Horses with ... orides. 8½x8, ... gauge wheels, ... covered with a ... composition ... cloth. ¾ doz. in box. Doz. $2.12

F3390—About 11x11, donkey, platform 10½x5, has wood back, ... ing trouch on ... ...

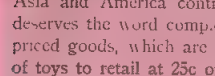
The World's Congress of TOYS

In scanning these pages you scan the toy products of the world, for the only things lacking here are the stale, trashy and common-place goods which our buyers rejected as undesirable. Europe, Asia and America contribute to this magnificent showing, which is the *only* one in America that deserves the word complete. **We are strongest** where the "toy houses" are weakest—in popular priced goods, which are the sellers and profit-payers of the retail toy business. Note how our showing of toys to retail at 25c or less dwarfs every other line in America.

Note in what uniformly small packages our toys are put up. Note that very many of the low priced goods come *assorted styles in package*, giving you several times the variety for same investment. Note the *careful selection* which marks these pages—the boiling out of all save the "safe" goods. We make it our business to keep a full stock of toys long after other jobbers have ended their season

REAL WOOL COVERED SHEEP.

These lifelike woolly sheep are among the most popular toys made. Soft [illegible]

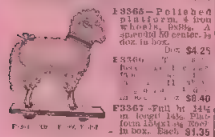


F3461 [illegible] with golden tin horns, composition [illegible] painted wool feet. 5½ in. long. Doz. 39c

F3362 [illegible] Doz. 80c

F3363 Hollow compressed paper sheep body, with natural painted colors, black face, neck padded wool feet, ribbon collar and bow at ear. ½ doz. in box. Doz. 92c

F3364 [illegible] Doz. $2.12



F3365—Polished plaster form, 4 iron wheels, 9x8½ in. A splendid 50 center. ½ doz. in box. Doz. $4.25

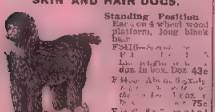
F3366 [illegible] Doz. $8.40

F3367—Full 9c 14½ in. long. Body of fine 15lb. [illegible] Wool in box. Each $1.35

SHEEP FOLD.

F3459—16 [illegible] 8½x7 platform, 4 wool covered sheep, tree [illegible] Doz. 86c

SKIN AND HAIR DOGS.



Standing Position.

Each on 4 wheel wood platform, long shag [illegible]

F3416—Size [illegible] 12 in. high. ½ doz. in box. Doz. 43c

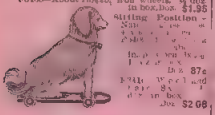
F3417—Size [illegible] 15 in. high. ½ doz. in box. Doz. 75c

F3418—Size [illegible] 18 in. high. 1 doz. in box. Doz. 89c

F3407 [illegible] Doz. $1.32

F3408—About 10x8½, iron wheels. ½ doz. in box. Doz. $1.95

Sitting Position.



[illegible] Each 87c

F3411 [illegible] Doz. $2.08

Sitting Position.

Each on 4 wheel wood platform, long shag [illegible]

F3412—Size [illegible] 12 in. high. ½ doz. in box. Doz. $2.20

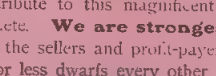
F3413—10 x 8½, with ribbon bow. ½ doz. in box. Doz. $2.75

F3414—Size [illegible] 15 in. high. ½ doz. in box. Doz. $3.25

F3415—Regal ribbon with bell [illegible] wheels bound [illegible] Doz. $8.25

with wires, 1-0 doz. in box

FUR SKIN SITTING ANIMALS.



F3357—10c [illegible] cats, rabbits, [illegible] eyes, long fur, [illegible] made in 3 [illegible] sizes. 4 doz. in box. Doz. 88c

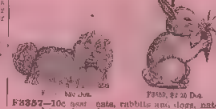
F3358—As above, 5 in. long. ½ doz. in box. Doz. $1.98

F3359—Rabbit with carrot, long fur [illegible] upright position when tail is pressed. [illegible] carrot in mouth and voice attached. 6½ in. ½ doz. in box. Doz. $2.25

F3360—As above, 8 in. high. ½ doz. in box. Doz. $3.60

Imported POODLE DOGS

With [illegible]



[illegible] Long [illegible] White [illegible] fect shape [illegible] Doz. $4.25

F3375—As F3374, large glass eyes, longer, 12 in. ½ doz. in box. Doz. $6.65

IMPORTED FELT ANIMALS.

F3369—10c [illegible] goat, dog, [illegible] different species [illegible] felted [illegible] tassel collars. Each, tails and [illegible] made [illegible] Each 89c

F3370—As F3369, metal cats, dogs, rabbits, [illegible] boxes, sitting positions, painted and shaped, ribbon neck band. About 6½ in. high. Doz. 95c

F3371 [illegible] and Doz. $2.00

FLANNEL FELT CATS.

F3372 [illegible] cat. Knee [illegible] extreme [illegible] dog. [illegible] three [illegible] nose, [illegible] natural [illegible] ½ doz. in box. Doz. $1.98

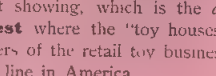
F3373 [illegible] Doz. $3.80

IMPORTED VELVET ANIMALS WITH RATTLE BODIES.

F3378 [illegible] eyes painted and striped backs, [illegible] ribbon collar with bow and bell, sound maker. 9½ in. ½ doz. in box. Doz. $2.25

F3379[illegible] As F3378, [illegible] longer. ½ doz. in box. Doz. $4.25

IMPORTED FELT AND VELVET ANIMALS ON WHEELS.



F3376 [illegible] Assorted [illegible] Doz. $2.15

F3470 [illegible] Assorted. About 8½x6½ in., covered with velvet in assorted colors, camels, cows, elephants, cat, tinsel trimmed, [illegible] ribbon neck bands and bells, horses, donkeys and cows with bridles, iron axles with iron wheels. ½ doz. in box. Doz. $4.20

ASSORTED FELT COVERED THOROUGHBRED DOGS.

F3377 [illegible] assorted colors with chain. ½ doz. in box. Doz. $4.25

F3381—[illegible] Doz. $8.75

CLOTH COVERED DOGS.

F3411 7x[illegible] sound. Made in [illegible] colors, wire frame covered with [illegible] Doz. $2.05

F3412—[illegible] Doz. $4.25

Two Special Values in EXTRA SIZE IMPORTED PET ANIMALS.

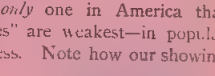
To retail at 25 and 50 cents.

F3372 3 styles rabbit, cat, dog, 8 [illegible] painted and striped backs collars, chenille [illegible] each with [illegible] in box, assrtd.

Per dozen, **$2.20**

F3373—As F3372, longer [illegible] ht. 8½ in. ½ doz. in box. Per dozen **$3.85**

GENUINE LEATHER COVERED ANIMALS.



F3398 Asst—Small but fine wood bodies, [illegible] glass pearline head eyes. Assd horses, cows, camels, etc. 9½x7 [illegible] Doz. 89c

F3399, On Wood Platform. Fine [illegible] Each [illegible]

F3401 Highest Work [illegible] Carpet [illegible] color, wall [illegible] Each when [illegible] be pulled electric [illegible] and moves [illegible] at [illegible] 10 in. on 12x8½ wood platform. Each, 60c

Iron wheels. Each in box. [illegible] Each, 80c

FUR SKIN GOATS On Wood Platforms.

F3417 [illegible] Doz. $2.19

F3418 Long [illegible] Doz. $3.80

F3419—As F3418, natural color [illegible] head, [illegible] platform, 10½x10½, [illegible] Doz. $7.00

F3420 Wood [illegible] [illegible] Each 85c

Each, 85c

LEATHER COVERED COWS— With Voice.

Mounted on 4 iron wheel platforms.

F3400—[illegible] about 11 in. wheels inside. Each [illegible] Doz. 75c

F3402—[illegible] Each in box [illegible] $1.25

F3403—10in. long, platform [illegible] value to sell at $1.75. Each in box. Each, $1.38

½ doz in box Doz. $4.25

F3401—Fine model, loud natural voice, about 11 in. wheels inside. Each [illegible]

DON'T TIE all your money up in goods. Keep a little "a-savin" for new things. When all your available cash is locked up in merchandise and a good new thing comes along you must pass it.

SIMMONS HARDWARE COMPANY

POCKET COMPASSES.

No. 112.

No. 6616.

No. 1773 35 PER DOZEN

No. 112 1½ inch Brass, with Cover; Card Dial, Plain Glass, Weight per Dozen, 8 ozs. $3.25
No. 134 1¾ inch Brass, with Cover; Card Dial, Plain Glass, Weight per Dozen 12 ozs. 4 25
No. 6616 1¾ inch Brass, Open Face; Beveled Glass, Card Dial, Weight per Dozen 8 ozs. 3 60
No. 1773 35—1¼ inch Nickel Plated, Open Face, Watch Shape, Silvered Card Dial; Weight per Dozen, 4 ozs. $4 00

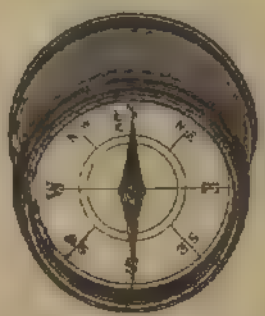
No 6617

No. 166/40.

No. 150/45. PER DOZEN

No. 6617 1⅝ inch Brass, with Cover; Beveled Glass, Card Dial, Weight per Dozen, 12 ozs. $5.00
No. 164 40—1½ Inch, Polished Gun Metal Finish Open Face, Watch Shape, Fancy Enameled Card Dial; Weight per Dozen, 6 ozs. 5.00
No. 150 45 1¾ inch Fancy Nickel Plated, Open Face; Watch Shape, Silvered Metal Dial; Weight per Dozen 10 ozs. 6 00

One-half Dozen in a Box.



No. 1409.

No. 1001.

No 889. PER DOZEN

No. 1409 1½ inch Brass, with Cover; Metal Dial, Weight per Dozen 1 lb. $11 50
No. 1001—1¾ inch Nickel Plated, with Cover; Agate Center and Divisions with Stops; Weight per Dozen, 1¼ lbs. 23 50
No. 889—1⅝ inch Nickel Plated, Hinge Cover; Agate Center and Divisions with Stops; Weight per Dozen, 1 lb. 27.00

One Dozen in a Box.

POCKET COMPASSES.

PER DOZEN.

No. 1702/50—1½ in., Brass, Open Face, Metal Dial, Agate Center, Full Divisions, with Stop and Ring. $12 00

One Dozen in a Box.

PER DOZEN

No. 1705/50—1¾ in., Brass, with Slip Cover, Metal Dial, Agate Center, Full Divisions, with Stop $15.60

One Dozen in a Box

PER DOZEN

No. 1721/50—2 in., Brass, Open Face, Metal Dial with **Raised Full Divisions,** Bar Needle, with Agate Cap and Stop $22.80

One Dozen in a Box

PER DOZEN

No. 1800—1⅝ in., Nickel Plated or Bronze English Hunting Case Metal Dial, White Divisions, English Bar Needle, with Agate Cap and Automatic Stop. $43 80

One-half Dozen in a Box.

PER DOZEN.

No. 1728B/50—2 in., Brass, with Brass Slip Cover, **Black Metal Dial,** Agate Center with **Raised Divisions,** $28 20

One Dozen in a Box

PER DOZEN

No. 1727N/50—2 in., Nickel Plated, with Nickel Plated Slip Cover, Metal Dial, Agate Center, Full Divisions, with Stop $29.40

One Dozen in a Box

PER DOZEN

No. 1754/70—2¾ in., Wood Box with Hinged Cover, Metal Dial, Agate Center, Full Divisions, Plain Needle, $18 00

PER DOZEN

No. 1753/70—2¾ in., Wood Box with Hinged Cover and Automatic Stop, Agate Cap, Metal Dial with **Raised Full Divisions, Bar Needle,** $25.70

One Dozen in a Package.

POPE
BICYCLES

Finest Line of BICYCLES Ever Offered

Columbia,	Price,	$40.00-$100.00	Crescent,	Price,	$25.00
Hartford,	"	$25.00	Monarch,	"	$25.00-40.00-50.00
Cleveland,	"	$40.00-75.00	Imperial,	"	$25.00-40.00-50.00
Westfield,	"	$25.00			
Tribune,	"	$40.00-100.00			
Stormer,	"	$25.00			
Rambler,	"	$40.00-50.00-60.00			
Ideal,	"	$25.00			

JUVENILES

Fay	26	inch wheels	-	$25.00
Crescent,	24	"	-	$22.50
Ideal,	20	"	-	$20.00

If all these lines are not represented in your town, apply for agency.
See full information in our catalogue, which will be mailed on request.

POPE MANUFACTURING CO.
HARTFORD, CONN.

Pope-Toledo Type XV.

PRICE, Fully Equipped $4,250

Notwithstanding the complete success and supremacy of Pope-Toledos in the past, new principles, new machinery, our long experience, and, above all, **Chrome Nickel Steel have wrought a complete revolution in our 1907 product.**

The new Type XV., which has been running since June 15th., marks an epoch in the history of the industry not only in America but in the world. Not a bolt, nut, screw or any of the hundreds of parts is like those in any other car we have produced. The engine, transmission, bearings, frame, wheels, axles, brakes, control, design—everything is new and better.

MOTOR: Four cylinder, four cycle; copper jacketed, twin cylinders cast in pairs, heads integral. Mechanically operated valves located in cylinder heads and operated by double acting walking beam by means of one set of cams and push rods.

TRANSMISSION OF POWER: Through multiple metal disc clutch working in oil tight case to transmission, containing four speeds and reverse; selective type and direct drive, made entirely from billets of chrome nickel steel testing 225,000 pounds tensile strength to the square inch.

DOUBLE DIRECT OUTSIDE CHAIN DRIVE: Type XV. is equipped with double, direct, outside Cham Drive, which is now conceded, both abroad and here, to be the most efficient. In Type XV. we have succeeded in absolutely obliterating all chain noise by a new method in sprocket dimensions and in cutting the sprocket teeth.

FRAME: Channel cold pressed alloyed steel frame, side members being very deep and beaded over; contains four cross sections, and motor is so mounted that by removing radiator it can be slipped forward and taken out without disturbing any other part of car. This is easily accomplished.

STEERING: Irreversible; worm and segment type, in adjustable dust and mud proof case. Steering done on Deutche Waffen Fabrik bearings.

AXLES. One piece Chrome Nickel steel I beam section; pivots and steering knuckles mounted on genuine Deutche Waffen Fabrik bearings.

BRAKES: All brakes double acting, easily adjusted by hand and equalized, one foot brake on drive shaft and two expanding emergency brakes of large surface acting on rear or drive wheels, enclosed in mud and dust-proof case. All brakes very efficient and powerful.

WHEELS: 36 inch wood wheels, 10 spokes front and 12 spokes rear, and running on genuine Deutche Waffen Fabrik bearings of generous dimensions; 3½ inch tire front, 4½ inch tire rear; wheel base 115 inches; tread standard 54 inches.

BODY: Steel, with roomy side entrance, and a seating capacity for seven adults; a very roomy tonneau; hood aluminum, new in design and opening from either side; guards aluminum, extra wide, large and flaring.

EQUIPMENT: Two large Parabolens acetylene searchlights; two large side oil lights; on rear signal light generator. Complete equipment of tools and extra large French horn.

POPE MOTOR CAR CO.

TOLEDO, OHIO

New York, 1733 Broadway Boston, 223 Columbus Ave.
Washington, D. C., 819 14th St., N. W.

Members Association Licensed Automobile Manufacturers.

Is the Motor Cool?

No? Well, we're surprised!

It's a prominent water-"cooled" car in the Glidden Tour. Nearly every checking station showed a line of these cars doing stunts like the above—steaming like a tea kettle over a hot fire.

We hate to think that the above happened because the motor was hot. Because water-cooling is "copied from the foreign cars" and must be right. Of course!

And air-cooling is an American theory. Wrong? Oh, of course!

But,

The Marmon air-cooled car (cylinders individually cooled) went through the Glidden Tour without overheating, without repairs or replacements, and finished with a perfect score.

The Marmon arrived at every one of the fifty four checking stations on schedule time without any favors or rebates. Not one foreign did as well. Marmon Air-cooling has been tried and proven in competition with the world's best in the severest test ever carried out.

A Hint to Agents

The Marmon has a large number of vital talking points—ease of control, flexible running gear, etc. The easiest riding car in the world.

Our 1907 proposition won't go begging. Better be the first in your territory to examine it.

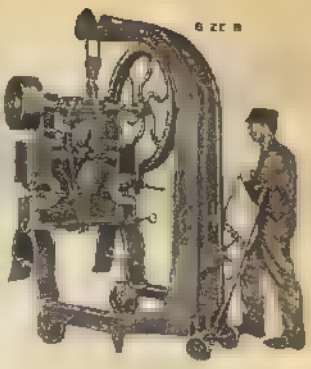
Estab. 1851 **Nordyke & Marmon Co.** Indianapolis, Ind.

Member Am. Motor Car Mfgrs. Assn.

PORTABLE CRANE AND HOIST.

SIZE 3A

SIZE B



DESCRIPTION. FIGS. 8998 AND 9000

This Portable Crane and Hoist is designed for use in [illegible] factories and all places where it is ever necessary to lift [illegible] and transfer [illegible] from place to place, and this with the least expenditure of time and labor and with safety. It can be and many times is easily run a man can carry it to points. Moreover it is easily moved, and every point in the shop is rendered accessible. It is ever ready, goes anywhere every where.

FIG. 8998.

PRICES. FIGS. 8998 AND 9000

Size.	Height of Crane. Ft. In.	Height of Hoist. Ft. In.	Width of Bed Outside. Ft. In.	Length of Bed Inside. Ft. In.	Length of Bed Outside. Ft. In.	Weight. Lbs.	Overhang. Ft. In.	Capacity. Tons.	Weight. Lbs.	Each.
3A	5 4	4 8	2 5	4 9	3 11	11	2	1	600	$100 00
A	5 4	5 8	2 8	5	3 3	12	2	2	650	100 00
2A	7 6	6 6	3 10	5 11	4 3	13	3	3	800	112 50
3A	7 0	5 8	3 3	4 4	4 10	12	3	3	775	112 50
B	8 9	7 8	5 8	5 6	5 10	14	3	3	1,000	125 00
2B	8 4	7 8	6 5	5 11	6 10	15	3	3	1,000	125 00
C	9 7	8 4	4 3	5 7	6 11	16	3	3	1,150	150 00
D	9 5	8 4	4 2½	6 7	6 11	19	3	3	1,300	175 00

Larger sizes furnished prices on application.

FIG. 9000.

PORTABLE ELECTRIC FLOOR TRUCK HOISTS.

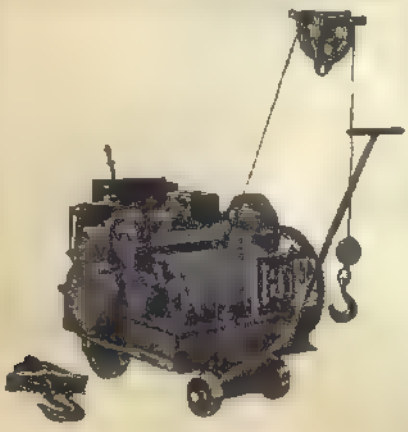


FIG. 9001

Can be detached from wheels and used as a winch on crane and derrick masts. Further information and prices on application.

SPEIDEL HAND SWING CRANES.

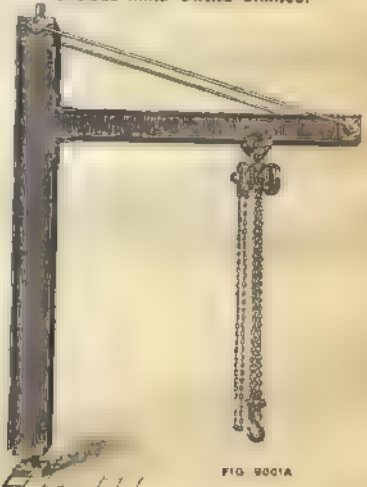


FIG. 9001A

Special prices according to requirements.

PNEUMATIC JIB CRANES.

FIG 9002

DESCRIPTION, FIG. 9002.

We can furnish various modifications of Pneumatic Jib Cranes to suit special duties. They are very handy and efficient for quick lifting in boiler shops, foundries, steel mills and structural plants where direct acting hoists can be used.

Prices and further information on application.

PILLAR CRANES.

DESCRIPTION FIG. 9003.

Double block design, with auxiliary power whip hoist. The stand ard type emits whip hoist.

These Cranes are extensively used by railroads and on docks for locations where a top support is not available. We furnish in a variety of designs, with and without auxiliary or whip hoists. The pillar is made of either iron or steel, as conditions require.

They may be made for operation by hand power or by electric power or in some cases by direct acting air hoists.

The straight boom is standard.

Prices and further information on on application.

FIG 9003.

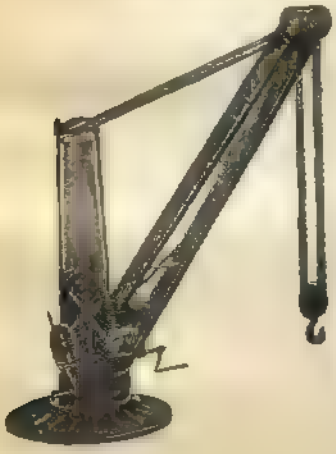


FIG 9004.

FARREL DIFFERENTIAL GEARED RAILROAD CRANES.

WITH CAST IRON POST AND STEEL JIB

PRICES, FIG. 9004.

Hoisting capacity tons	4	6	10
Radius will swing, feet	10	13	15
Height will raise above base, feet	8½	13½	14½
Weight lbs.	6 500	10,600	13 000
Each	$600 00	$900 00	$650 00
Hoisting capacity tons		15	20
Radius will swing, feet		16	20
Height will raise above base, feet		14½	17
Weight, lbs.		18,700	27,000
Each		$1,180 00	$1,800 00

Foundation bolts and anchor plates are included in price

GAS PRODUCERS AND PRODUCER GAS ENGINES.

THE PRODUCER

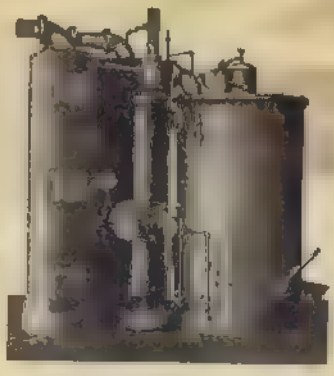


FIG 1025I

DESCRIPTION, FIGS 1025I AND 1025Z

The progress which has been made in the development of power must eventually turn to the Gas Engine, using Producer Gas as the motive agent. The fuel must first be converted into a coal gas. The Engine [illegible] must be adapted to the use of this gas. The Engine and the Producer are relatively [illegible] and we find [illegible] without first going into details of the [illegible] gas producer to help out the [illegible] which has been [illegible] to the use of gas engines. Of these types, we add [illegible] with the intention of [illegible] interview with [illegible]

[illegible] Producer or [illegible]

HORIZONTAL TANDEM PRODUCER GAS ENGINE.

AUTOMATIC CUT OFF

FIG 1025Z.

1385

TWO CYCLE MARINE ENGINES.

DOUBLE CYLINDER

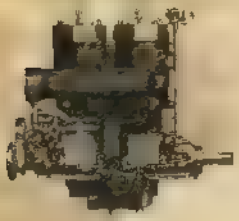


FIG. 10253
[illegible] H. P.

QUADRUPLE CYLINDER

FIG. 10254.
[illegible] H. P.

SINGLE CYLINDER MARINE ENGINE
WITH REVERSING PROPELLER EQUIPMENT

FIG. 10255.

FIG. 10256
Sectional Drawings of Engine.

DESCRIPTION, FIGS 10253 TO 10256

Our line of Two Cycle Marine Engines is [illegible] from 3 to 40 horse power each, comprising single [illegible] triple and quadruple Engines with [illegible] equipments [illegible] with reversing rudder.

In the [illegible] high grade [illegible] light [illegible] material [illegible] and finish.

These [illegible] are very efficient [illegible] safe. They are very light in weight [illegible] the power developed.

We issue specia[illegible] which will send on application.

SPEED BOAT, THE FAIRBANKS II.

FIG. 10257

Our St. [illegible] Launch, "Fairbanks II" [illegible] 30 horse power engine, has a speed record in competition of 24 miles an hour.

THE FAIRBANKS COMPANY

IMPORTED CHINA TABLE PLATES Continued.

R3900—8½ in. fancy gold border, color with wreath of shaded pink flowers

Doz. $2.15

R3398 ... gold tip, border wreath of pink and yellow roses and small flowers, tinted in center

doz. in pkg. $2.20

R3404 ... ing with groups of 3 roses, scalloped ... ders in pkg.

$2.90

R3409—9½ ... ground flange gold scroll on ... band edge, rose spray center ... 8 in pkg.

Doz. $3.10

R3399 ... edge, flange with rose club ... terns and border around ... g doz. in pkg.

Doz. $2.25

R3405—10 in. gen... Luncheon Border, gold ... scalloped ...

Doz. $3.45

R3398—9½ in. fancy grape ... heavy emboss ... gold outline ... center, ... colors, ... ½ doz. in pkg.

Doz. $2.25

R3408—10 in. ... shape ... China ... green ... roses and ... poppy ... decor... Luncheon ...

Doz. $3.45

R3406 ... pink roses and green leaves ... rose sprays ... center ½ doz. in pkg.

Doz. $3.65

R3400 ... allover ... vine and ... wreath ... Asstd. ...

Doz. $2.25

Top panel ... doz. in pkg.

Doz. $2.25

R3401 ... clusters of fruit and flowers connected ... gold ... in fancy ... tossed ... ed with ... gilded gold. Extra quality china.

Doz. $2.25

R3402—9½ ... in new ... dresden ... flow. com. ...

Doz. $2.25

wreath edge

R3407 ... top embossed ... dec ... gold band edge. Fine Bavarian china.

Doz. $2.25

OUR 25 CENT LEADER.

R3407—10 in., ... alloy, hybrid color flowers and ... cluster wreath, spray ... shape ... gold tinted rim flange, scalloped ... edge ... ½ doz. in pkg.

Per dozen, **$2.25**

R3410 ... by gold scroll garlands, embossed scallop ... covered with ... of gold. Asstd. ...

$3.85

R3411 ... flower with ... ribbon and ... small rose ... square all ... rim with gold spray border, small ... edges. ½ doz. in pkg.

Doz. $3.95

R3412 ... scalloped gold edges, natural ... or pink and red roses in wreath center, large ... and ... allover decoration. Stylish ... shape. ½ doz. in pkg.

Doz. $4.10

R3418—9½ in. deep ...

SPECIAL PORTRAIT PLATE.

R3436M ... Choice ... Asstd. ...

Per dozen, **$2.25**

THIS IS ESPECIALLY GOOD.

R3411 ... 3-color ... spanese gold ...

$4.25

R3413 ... with rose and ... ards, gold wreath and wide gold ... and on scalloped plate. Asstd. Each green, pink ... and blue ... ½ doz. in pkg.

Doz. $4.25

HIGH GRADE IMPORTED CHINA PLATES.

... room size ...

R3417 ... The Raven, ... tinted background to match gold ... shade. Choice ... tones green or terra cotta ...

Each, 39c

... inner gold wreath, flange with gold festooning ... to outlines, gold ... asstd. ½ in pkg.

Each, 36c

R3418—9½ ... gold spoon and fork ... der with ... fuchsias ...

Per ...

"QUEEN LOUISE" PICTURE PLATE.

A very popular design to retail at $1.00.

R3419 ... dark blue. As ...

58c

R3420 ... green leaves in picture design. ...

Doz. 62c

R3421—9½ in. Java ... fine ... ...

Doz. 65c

R3422 ... 10½ ... and small clusters, trademark ...

HIGH GRADE PLATES Continued.

R3424 ... with roses, gold sprays and ... surrounded by burnt piece of gold. Each ...

Each 67c

R3425 ... gold lattice band alternating ... rose medallions and ... hand color. Each in pkg. ...

Each 68c

R3426 ... quet of pink and yellow roses embossed border ... wide scalloped gold edge. Asstd. ...

Each 74c

R3021 ... roses, leaves, ... embossed daisies with ... gold wreath and gold ... gold ... an small center surrounded by gold wreath ... 2 in pkg. ...

Each 85c

R3425 ... room picture ... Each 73c

R3423 ... embossed ...

R3424 ... a rich green with ... and inner gold wreath and ... edge. Asstd., 2 in pkg. ...

Each 75c

R3424 ... and ... portrait ... frame. Asstd. ...

Each 75c

This will be a winner

R3426 ... In ... dec ... gold ... Each ...

Each **73c**

HIGH GRADE PLATES Continued.

FINE AUSTRIAN TRADEMARKED PLATE.
Fine grade of china, handsomely decorated.

R3420 ... 78c

R3998— ... 80c

R3430 ...

ornaments, silvery effect, wide gold band, embossed edge. Assid. 2 in pkg. ... Each, 85c

R3433— ... Each in pkg. ... Each 95c

R3452 ... $1.15

R3446 ... $1.20

R3429½— ... Each $1.30

R3010 ... Each $1.35

R3925— ... $1.40

IMPORTED CHINA HANDLED CAKE PLATES.

R3434— ... Each, $1.64

R3440 ... Each $1.80

R3448—10 in. ... Doz. $1.90

R3449—10 ... Doz. $2.00

R3450 ... Doz. $2.05

... Doz. $2.10

R3451 ... handles, gold edge. ¼ doz. in pkg. Doz. $2.20

R3455— ... Doz. $2.25

R3458— ...

... tone gold, decorated handles, rose center. ¼ doz. pkg. Doz. $2.25

HANDLED CAKE PLATES Cont'd.

R3458 ... wreath effect with spray in center ... Doz. $3.00

R3461— ... Doz. $3.20

R3464 ... Doz. $3.50

R3467 ... Doz. $3.65

R3471— ... Doz. $3.85

... and impressed purple rose clusters and scrolls. ¼ doz. pkg. Doz. $3.85

"MOTTO" CAKE PLATE.

77 ... and be at rest"

R3472 ... $3.95

R3466 ...

... tone gold outline embossing, gold decorations, dozen pkg. Doz. $4.25

HANDLED CAKE PLATES Cont'd.

OUR BIG VALUE 50 CENTER.

R3426 ... $4.25

R3424 ... Doz. $4.15

R3427 ... ¼ doz. in pkg. ... $4.20

R3468 ... Doz. $4.20

R3471— ... $4.25

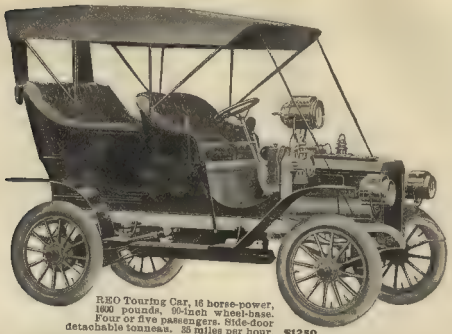
R3476 ...

... inner roses, buds and leaves all ¼ doz. in pkg. ... Doz. $5.75

R3477 ... $5.85

R3478 ...

... with green shading and alternating with ... ¼ doz. in pkg. Doz. $8.00



REO Touring Car, 16 horse-power, 1600 pounds, 90-inch wheel-base. Four or five passengers. Side-door detachable tonneau. 35 miles per hour. **$1250.**

REO

FIVE PRIZES OUT OF SEVEN

A REO 16 horse-power bus with the same engine as the touring car shown above won the National Trophy and two other prizes in the New York Motor Club's great six-day Economy Test, by carrying its load 682 miles at a total cost (including ferriage) of $2.93 per passenger.

The REO four-seated Runabout (price $675) won the gold medal for cars up to $1500, and one other prize, carrying four passengers 682 miles for $3.38 per passenger.

REO cars not only show the winning speed and power which keep them at the head of their class in every racing and climbing contest they enter; but their remarkable convenience and practicality exactly meet common-sense requirements and make speed and power worth while.

Freeze-proof; jar-proof radiator; perfect and positive oiler; simple operation and simple enduring strength—are some of the features which make REO the car that practical motorists want.

Write for the REO book that tells why

REO Motor Car Co.

Sales Department, Lansing, Michigan

R. E. Olds, *Pres.* R. M. Owens, *Sales Mgr.*

Agencies Throughout the United States

SHELDON COMPOUND PINCH BAR.

DESCRIPTION, FIG. 8548.

With this powerful Bar two cars can be moved with head. It will not slip, and will work under any style brake. Made with malleable iron handle interchangeable steel pinch head of best material so four corners can be used and may be replaced by a new one in a few seconds.

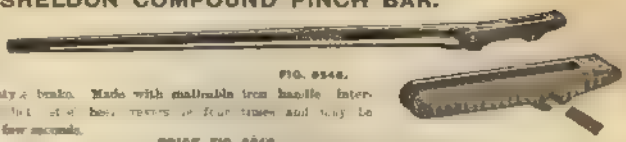


FIG. 8548.

PRICE, FIG. 8548.

Each $5 00

ATLAS CAR MOVER.

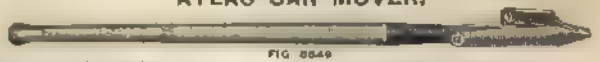


FIG 8549

SHOWING ATLAS CAR MOVER IN USE.

DESCRIPTION FIG. 8549

The metal parts are malleable iron and steel. The handle is of the best selected hard or sugar maple. The spur, or heel, is of the finest tool steel it can be turned and all four corners used. One extra spur with each Mover

The compound lever arrangement acts on the car wheel so far from its contact with the rail that the moving force is utilized to roll it forward, instead of wasted in an effort to raise it from the track.

PRICE, FIG. 8549.

Each $3.00

SAMSON CAR MOVERS.

DESCRIPTION, FIG. 8550.

A powerful and simple device for moving railway cars. The spur and spring are held in place by patent clamping device. The spur can be taken out and changed from a dull to a sharp edge, or replaced with a new spur readily and more satisfactorily. The spring that slides on the rail prevents much wear on the spur and materially assists the operator by releasing the spur from the rail, and thereby giving the Mover free access to slide on the rail.

The Samson Locomotive Car Mover is an exact duplicate of the Samson, only larger, heavier, stronger and longer, and is adapted exclusively for handling heavy freight cars and locomotives.

Great care should be exercised when ordering spurs to state definitely whether they are to be square or triangular as a square spur cannot be used in one that was formerly made for a triangular spur. All Samson Car Movers now being manufactured are fitted with spurs made for square spurs.

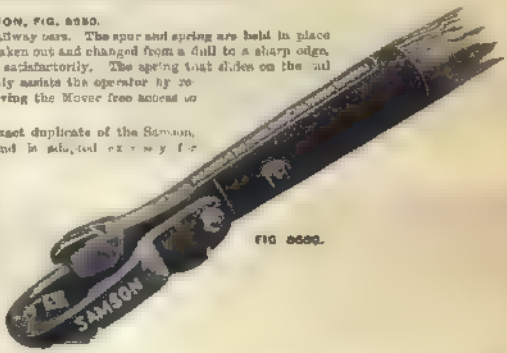


FIG 8550.

PRICES FIG. 8550.

Ranging in weight from 20 lbs. each $5 00
Ranging in weight from 30 lbs. each 6 00

PRICES OF EXTRAS FOR SAMSON RAILWAY CAR MOVER.

No. 2, cam in end of arm	$0.20	No. 4, spring that slides on rail	$0 25
No. 3, [illegible]	2[illegible]	No. 5, arm, bolted to handle	1 25
No. 4, wood handle	1.60	No. 6, shoe, for triangular spur	1 25
No. 5, spur, state if to be square or triangular	.30	No. 8, shoe, for square spur	1 25

PRICES OF EXTRAS FOR SAMSON LOCOMOTIVE RAILWAY CAR MOVER.

No. 2, cam in end of arm	$0.25	No. 14, spring that slides on rail	$0 25
No. 3, [illegible] behind spur	.30	No. 15, arm, bolted to handle	1 50
No. 13, wood handle	1.25	No. 16, shoe, bolted to arm	1 50
No. 13, spur that rests on rail	25	No. 17, steel pin, goes through cam	30

DOUBLE CLUTCH CAR MOVER.

FIG. 8551.

DESCRIPTION FIG. 8551.

This Mover will hold and do its duty on an icy track. Will move loaded cars by hand power easily and quickly at a minimum cost of labor and time.

The Double Clutch Car Mover has two features that are entirely new and most practical. First—The concave block coming in contact with the outer rim of the wheel turns it but does not lift it. Second—The double clutch has V shaped bits which catch the edges of the rail, where it is soft. The harder you bear down on the lever the tighter they stick to the rail. It is made of malleable iron and best tempered steel and weighs only 18 pounds.

PRICE FIG. 8551

Each $5 00

EASY CAR PUSHER.

DESCRIPTION, FIG. 8552.

The bar is steel and tempered at the point, so as not to wear. The heel is malleable, and the triangular bit is made of the finest tool steel. As shown in the cut, the heel has lugs extending downward on both sides of the rail so as to hold it firmly in position and prevent it slipping sideways, and the triangular bit of steel marked B cuts into the rail when pressure is applied and prevents slipping backward, even though the rail is icy, greasy, or wet. This bit can be inverted until the three points are dull, and then sharpened. When the pressure is released the steel spring marked C lifts the steel bit B from the rail, thus saving it from being dulled by sliding over the rail when following the wheel.

The Pusher weighs but 26 pounds, is easily handled, and can be operated by anybody. Sent on trial. Two triangular steels with each Pusher. Extra steels, 90 cents each. Length of Pusher, 5½ feet.

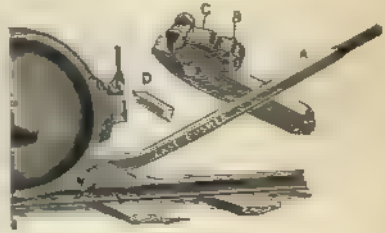


FIG. 8552

PRICE, FIG. 8552

Complete, ... $5 00

SPECIAL CAR MOVER.

FIG. 8553.

DESCRIPTION, FIG. 8553

This Mover applies a power of 2,000 to 5,000 pounds [illegible] line of wheel and [illegible] the direct course of the revolution of the wheel and, if properly [illegible] the rail track [illegible] added [illegible] weight [illegible] It does not work on the rail and pipe [illegible] over a barrel and [illegible] the full length [illegible] radius of the wheel. The hook [illegible] the wheel and [illegible] arch bar [illegible] be [illegible] adjusted [illegible] ar [illegible] It also plays that [illegible] wear can be quickly renewed and ground when [illegible] and when finally ground away a new pair of plates will be furnished for 75 cents.

PRICE, FIG. 8553

Weight, lbs. 28
Each $5 00

GIANT CAR PUSHER.

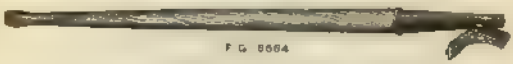


FIG. 8554

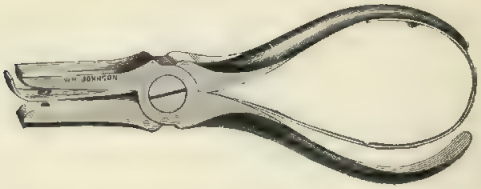
DESCRIPTION FIG. 8554

It has great leverage power, for two [illegible] Pusher as no power in winter in lifting up the wheel. Ice or grease on the rail does not [illegible] working, and any advantage gained in starting may be followed up and the car kept moving until passed in position. [illegible] used at [illegible] end of a riddle of [illegible] The handle is of best quality wagon [illegible] Both socket and foot are [illegible] cast upon [illegible] or cast rubbing on wheel, pulled to prevent wear. The Pusher will thus be seen to be built for hard work. The weight is only 24 pounds.

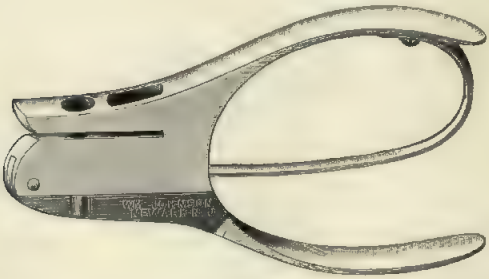
PRICE FIG. 8554

Each $5 00

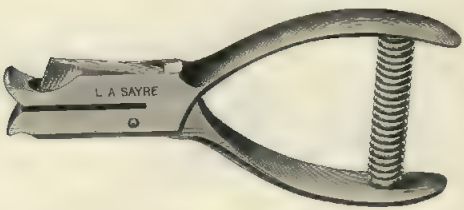
CONDUCTORS' PUNCHES.



No. **253.** Nickel Plated, Reach of Jaw 1½ Inches, Assorted Fancy Designs Per Doz $13 00
Half Dozen in a Box.



No. **269.** Nickel Plated, Reach of Jaw 3-4 Inch, Assorted Fancy Designs . Per Doz $20 00
One in a Box.

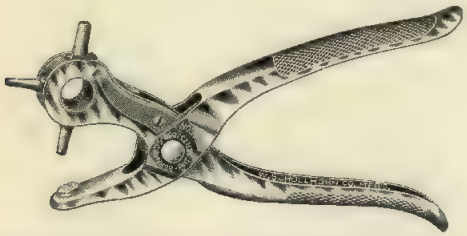


No **438.** Nickel Plated, Reach of Jaw 1⅛ Inches, Assorted Fancy Designs. . Per Doz $28 00
One in a Box.

REVOLVING SPRING PUNCHES.

No. **10.** 4 Tube, Polished, Assorted ..... Per Dozen $10 00
No. **11.** 6 Tube, Polished, Assorted ..... " 13 50

Half Dozen in a Box



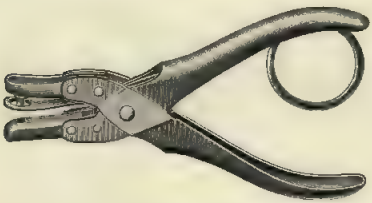
No. **284 Paragon.** 4 Tube Stamped Steel, Nickel Plated, Screw Tubes, Assorted ..... Per Dozen $14 50

Half Dozen in a Box.

Extra Tubes.

No. **23.** For Nos. **200, 10, 11** Punches Per Dozen $1 50
Paragon, For No. **284** Punch ..... " 2 00

TICKET PUNCHES.



No. **41.** Made of Steel, 5 Inches Long, Nickel Plated, Assorted Fancy Designs Per Dozen $4 00

Half Dozen in a Box.

RAILROAD OILERS.

NO. H.

FIG 4773

DESCRIPTION, FIGS. 4773 AND 4774.

These Oilers are made from two seamless drawn parts, and are used by the leading railroads of the country.

Smooth surface, cold rolled, No. 20 gauge. Swedish steel is used in their manufacture.

They are heavily electro copper plated inside to prevent rusting and the oil from becoming gritty.

The outside of copperized Oilers perfectly resembles burnished copper.

Nos. 17 and 18 Oilers are heavily nickel plated on electro copper plate, and highly polished.

PRICES, FIGS. 4773 AND 4774.

COLD ROLLED "SWEDISH" ANTI-RUST STEEL.

	Capacity, Quarts.	Diameter, Inches.	Height, Inches.	Spout, Inches.	Per Dozen.
No. 10, copperized	½	3½	5	10	$14 00
" 11, copperized	1	4½	6	12	[illegible]
" 17, nickel plated	½	3½	5	8	[illegible]
" 18, nickel plated	1	4½	6	9	[illegible]
101 copperized	1	4½	6	9	21 00
" 111, copperized	2	5	8	10 or 14	35 00

For price of spouts, see page 423, Fig. 4816

PRICES, FIG. 4773 AND 4774.

BRASS

	Capacity, Quarts.	Diameter, Inches.	Height, Inches.	Spout, Inches.	Per Dozen.
No. 17	½	3½	5	12	$18 00
" 18	1	4½	6	12	21 00
" A	2	5	8	10 or 14	32 00

NO. 111.

FIG. 4774.

LOCOMOTIVE OILERS
BRAZED STEEL

FIG. 4775

DESCRIPTION, FIG. 4775.

This Oiler has been designed with a view of producing for railroad service an Oiler entirely of steel, that would possess the highest possible efficiency, together with durability and grace of design.

Every joint is brazed with hard spelter, thus producing very great strength at these points.

Neither the roughest usage nor a red heat will cause a leak.

PRICES, FIG. 4775.

No.	Pints.	Diameter, Inches.	Height, Inches.	Weight, Inches.	Per Dozen.
100	½	4	5	[illegible]	$ [illegible]
102	½	4	5	22	12 00
104	2	4	8	18	17 00
106	2	4	6	25	18 00

[illegible] Oiler [illegible] brazed [illegible] such heat [illegible]

VALVE OILERS.
EXTRA HEAVY TIN.

FIG 4776

DESCRIPTION, FIG. 4776.

This Oiler is made from heavy tin [illegible] valve [illegible] flow [illegible] and [illegible]

[illegible]

PERFECTION LOCOMOTIVE OILERS.

FIG 4777.

PRICES FIG 4777

Pints.	Brass [illegible]	Tin	Brass	Copper [illegible]
½	1	$2	$1 00	$ 00
2	16	9 00	18 00	14 00
3	16	10 00	20 00	16 00

OILER AND TORCH COMBINED.

FOR LOCOMOTIVE AND STATIONARY ENGINEERS.

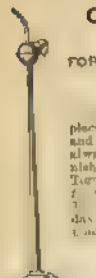


FIG. 4778.

DESCRIPTION FIG. 4778.

[illegible] and [illegible] cylindrical [illegible] pieces [illegible] and the Oiler in the right [illegible] always have one hand free. The fuel [illegible] nishes from the body of the can, so that the Torch is always ready for use. It will burn [illegible] heat filling the Oiler [illegible] up [illegible] be way for [illegible] use. The [illegible] Torch combined is made from heavy steel copper [illegible]

PRICE, FIG. 4778.

[illegible] one quart oiler and Torch [illegible] inches diameter [illegible] inches high, 18 inch [illegible]

Per dozen [illegible] $55 00

ENGINEERS' OILERS.

HORIZONTAL

ENGLISH PATTERN.

FIG. 4779.

PRICES, FIG. 4779.

	Without Valve		With Valve	
Capacity, pints	1	2	1	2
Tin, per dozen	$36 00	$48 00	$42 00	$60 00
Brass, per dozen	36 00	48 00	24 00	30 00

ENGINEERS' PERFECTION HAND OILERS.

Tin goods made of IXX charcoal plate

FIG. 4780.

PRICES, FIG. 4780.

	Without Valve								With Valve							
No.	[illegible]	25	30	40	250	275	350	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Capacity, pints	½	1	2	4	½	1	2	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tin, per dozen	$8 00	$9 00	$1 10	$15 00	$8 50	$9 50	$12 00	$1 60	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Brass, per dozen	12 00	13 00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nickel, per dozen	14 50	17 00	20 50	30 00	15 00	18 00	24 00	34 00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

KAYE PATENT SEAMLESS OIL CANS.

FIG. 4781.

DESCRIPTION, FIGS. 4781 AND 4782.

The [illegible] form [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] and [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

HEAVY RAILWAY VISES.

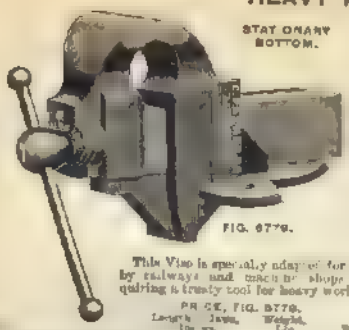


FIG. 6779.

This Vise is specially adapted for use by railways and machine shops requiring a trusty tool for heavy work.

PRICE, FIG. 6779.

No.	Length of Jaws, Inches.	Weight, Lbs.	Each.
100	8½	240	$45 00

The steel faces of these Vises are milled and fitted to the jaws and are renewable.

FIG. 6780.

This Vise is designed to meet the requirements of machine shops, railways, etc., being a Vise of special strength.

PRICE, FIG. 6780.

No.	Length of Jaws, Inches.	Weight, Lbs.	Opens, Inches.	Each.
100	8½	230	12½	$60 00

STATIONARY VICTOR VISES.

SEMI STEEL.
FOR EXTRA HEAVY WORK

SWIVEL BACK JAW

FIG. 6781

DESCRIPTION FIG. 6781

An extra heavy Vise with swivel back jaws, for use of railroads, machine shops, car builders, etc.

PRICE FIG. 6781

No.	Length of Jaws, Inches.	Weight, Lbs.	Opens, Inches.	Each.
240	7½	195	12	$30 00

The steel faces of these Vises are milled and fitted to the jaws and are renewable.

DESCRIPTION, FIG. 6782.

This Vise is designed to do same work as Vise No. 240, Fig. 6781. It has swivel bottom in addition to swivel back jaw.

PRICE, FIG. 6782

No.	Length of Jaws, Inches.	Weight, Lbs.	Opens, Inches.	Each.
240	7½	205	12	$35 00

SWIVEL VICTOR VISES.

SEMI STEEL.
FOR EXTRA HEAVY WORK

SWIVEL BACK JAW

FIG. 6782.

The steel faces of these Vises are milled and fitted to the jaws and are renewable.

STATIONARY VICTOR VISES.

SEMI STEEL.

FIG. 6783

These Vises have solid frames and swivel jaws, which are particularly adapted to those who have occasion for holding irregular shaped pieces.

PRICES, FIG. 6783

No.	Length of Jaws, Inches.	Weight, Lbs.	Opens, Inches.	Each.
270	2½	85	3½	$6 00
27	3½	60	5	7 50
272	4½	57	6	10 00
273	5	78	7	11 00
[illegible]	5½	90	8	17 00
[illegible]	6½	130	9½	24 00

PRICES, FIG. 6784.

No.	Length of Jaws, Inches.	Weight, Lbs.	Opens, Inches.	Each.
27	4½	80	8½	$17 00
271	5½	42	5	8 00
272	4½	80	6	12 00
273	5	78	7	16 00
274	5½	110	9	21 00
275	6½	185	9½	27 00

SWIVEL VICTOR VISES.

SEMI STEEL.

FIG. 6784

These Vises have pad adjusting back jaws, with automatically adjusting chain for holding irregular shaped pieces.

The steel faces of these Vises are [illegible] fitted to the jaws and are renewable.

REINFORCED SLIDE SOLID JAW VISES.

SEMI STEEL.

SLIDE STRENGTHENER.

FIG. 6785.

GENERAL DESCRIPTION FIGS. 6785 TO 6787

The cut Fig 6785 represents a [illegible] or broken [illegible] showing a solid steel bar strengthener B inserted the entire length of the slide, rendering the slide or movable jaw of these Vises practically unbreakable. This improvement is used on Reinforced Slide Vises [illegible] and [illegible].

The steel faces of these Vises are milled and fitted to the jaws and are renewable.

STATIONARY BOTTOM

FIG. 6786.

PRICES, FIG. 6786

ROUND JAWS.

No.	Weight, Lbs.	Length Jaws, Inches.	Opens, Inches.	Each.
30	30	3½	4	$6 .5
35	47	4¼	6¼	[illegible]
40	64	4¾	7	9 .5
50	90	4⅝	8	12. [illegible]
60	115	5¾	8	15 [illegible]
70	154	6¼	9½	24 00

SWIVEL BOTTOM

FIG. 6787

PRICES, FIG. 6787 ROUND JAWS

No.	Weight, Lbs.	Length Jaws, Inches.	Opens, Inches.	Each.
329	35	3½	4	$7 00
330	53	4¼	6¼	8 [illegible]
340	78	4¾	7	[illegible] 00
350	98	4⅝	8	14 50
360	118	5¾	8	20 50
370	165	6¼	9½	30 00

IMPROVED STATIONARY.

FIG. 6788.

IMPROVED STATIONARY VISES.

SEMI STEEL.

The steel faces of these Vises are milled and fitted to the jaws and are renewable

PRICE, FIG. 6788. ROUND JAWS

No.	Weight, Lbs.	Length Jaws, Inches.	Opens, Inches.	Each.
3½ X [illegible]	190	7	10½	$30 00

PRICES, FIG. 6789. ROUND JAWS

IMPROVED STATIONARY VISES.

SEMI STEEL.

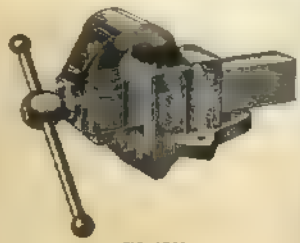


FIG. 6789

The steel faces of these Vises are milled and fitted to the jaws and are renewable.

No.	Weight, Lbs.	Length Jaws, Inches.	Opens, Inches.	Each.
0 0X	20	3¼	4¼	$6 25
1 X	45	4½	5 [illegible]	7 00
2 X	68	4⅝	6 [illegible]	[illegible] 00
3 X	92	4⅝	7¼	11 [illegible]
4 X	119	5½	[illegible]	16 [illegible]
5 X	130	6½	1 [illegible]	24 00

PRICES, FIG. 6790

ROUND JAWS

This Vise can be set up with right swing shed for swivel either right or left to it.

The steel faces of these Vises are milled and fitted to the jaws and are renewable.

No.	Weight, Lbs.	Length Jaws, Inches.	Opens, Inches.	Each.
2 X	53	3¼	4 [illegible]	$7 00
2½X	62	3¾	3½	[illegible] [illegible]
3 X	80	4¼	6½	11 00
3½X	95	4⅝	5½	14 50
4 X	139	5½	8½	20 50
5 X	176	6¼	10½	30 00

IMPROVED SWIVEL VISES.

SEMI STEEL.

FIG. 6790

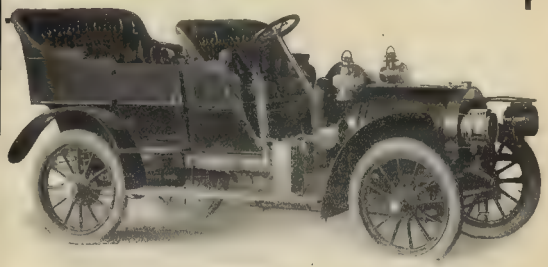
THE ENTERPRISE MFG. CO. OF PA.

THE 1906 MODEL B

Rainier

"The Pullman of Automobiles"

Absolutely the highest grade motor car built in this country, bar none, and the only car that can consistently compete with foreign machines. You will do yourself an injustice if you decide on your car without investigating this triumphant American production. New style make and break spark. Simms-Bosch Magneto, Bevel Gear Drive. Very large and roomy full aluminum bodies.



Model B Rainier, 30-35 H. P. Price, $4,000

Guaranteed Free of Repairs for One Year

Do you realize fully the great superiority of the "make and break" over the jump spark?

Do you know that it does away entirely with the coil, the commutator, the batteries, and the spark plugs, and substitutes for all these a simple hammer and anvil, mechanically operated, which cannot get out of order?

Do you know that 90 per cent. of the foreign makers have already adopted this method?

Do you know that the RAINIER car is guaranteed not to cost one dollar for repairs within one year of purchase, unless you have an accident, and that it stands alone in this respect?

Learn all about it in our new Bulletin just issued.

THE RAINIER COMPANY, Broadway, Cor. 50th Street, New York

Boston Agents: MORRISON-TYLER MOTOR CO.

Good Agents wanted in unassigned territory.

GLOVES AND BASE BALL BATS.

FIELDERS GLOVES.

No. 53.

The "Reach" Men's Fielders' Glove No. 53.

Made of olive tan leather, well padded with good quality felt, inside hump, web thumb. Packed one in a box

No. 53. Each. . . . . .

The "Reach" Men's Fielders' Glove No. 18.

Made of fine drab buck dressed leather, patent hump well padded and patent deep pocket web thumb Packed three in a box.

No. 18. Each **$0.50**

The "Reach" Boys' Fielders' Glove No. 24.

Made of fine drab buck dressed leather, felt padded, patent hump, web thumb and patent deep pocket. Packed six in box

No. 24. Each. **$0.25**

BASEBALL BATS.

The "Reach Blue Ribbon" Burley Bats.

These bats are made in three styles, plain handle, plain with taped handle and ebony finish with taped handle, of the highest grade selected second growth, straight grained, white ash Air dried timber Made on models submitted by the leading players, they are hand turned under the watchful eyes of an expert, to make certain that they will be perfect in every respect, special finish and nicely balanced.

Endorsed by the leading batsmen of the American and National leagues.

No. 5-0. Special white finish, taped handle... Each **$1.00**

No. 6-0. Ebony finish, taped handle..... " **1.00**

The "Reach Perfect Balance" Bats.

These bats are made of the highest quality, second growth white ash, on a special model which enables the player to get a more even distribution of the weight than they can with the old models Must be seen to be appreciated.

No. 1M. Burnt finish, plain handle . . . . . Each **$1.00**

No. 3-0 Bats are made of high grade second growth white ash, hand turned, burnt and burnished. Special finish, finest quality. Packed one dozen in a crate. Assorted lengths and weights

No. 3-0. Each. **$0.75**

The "Reach" Boys' Burley Bat No. 2-0.

Made of high grade second growth white ash, ebony finish, an exact duplicate of our No 6-0, only boys size. Best boys' bat made. Packed one dozen in a crate

No. 2-0. Each. **$0.50**

The "Reach" League Bat No. 1-0.

Made of selected second growth white ash, special finish. Tape wound handle. The best bat on the market at the price Packed one dozen in a crate. Assorted lengths and weights.

No. 1-0. Each **$0.50**

The "Reach" Men's Bat No. 81.

Made of extra quality white ash, fine finish. "Reach" trade-mark on each bat. Packed one dozen, in a crate. Assorted lengths and weights

No. 81. Each. **$0.50**

The "Reach" Men's Bat No. 82.

"Special green tinted finish" are made of good quality ash. Best men's bat at the price. Assorted lengths and weights. Packed one dozen in a crate.

No. 82. "Special finish". . . . . Each **$0.25**

The "Reach" Boys' Bat No. 83.

"Red Band" are made of extra quality white ash. Length, 31 to 32 inches Red Band' trade-mark on each bat Packed three dozen in a crate Assorted weights

No. 83. 'Red Band". . Each **$0.25**

The "Reach" Boys' Highly Polished Ash Bat No. 87.

Green tinted finish with black stripe and Red Band' trade-mark in center; 30 inches long. Packed three dozen in a crate. Best bat on the market at the price.

No. 87. Each **$0.10**

FIELDERS' GLOVES.

No. OBL.

No. 04.

No. 3G.

The "Reach" Fielders' Glove No. OBL.

"Reach" Fielders' Gloves are made of specially selected leather, felt and other materials. Exceptional care is taken in their construction. The cutter selects only the very best leather—the felt is specially made for these gloves—they are made by the most skilled operators in our employ. In addition to this they are thoroughly inspected at every stage of their making, insuring a perfect article when finished

They are made in two colors, drab buckskin and black calfskin, on our celebrated OB pattern, leather lined and welted, and are so constructed that they are ready for use, require no breaking in. Endorsed by all the leading players Packed one in a box. Sizes carried in stock—13, 14 and 15

Drab Buckskin.

No. OBL. Drab buckskin.. .. ..Each **$3.50**

The "Reach" Professional Fielders' Glove No. OB.

Made in such a manner that this effect is gained by the arrangement of the padding on the inside of the glove and the little finger being made wider and more heavily padded, this leaves the outside surface smooth and insures a glove that will prove satisfactory in every way. Highest quality of leather, felt and other materials in their construction

This season we are making them in three styles: drab buckskin, black calfskin and brown calfskin. High quality.

No. OB. Drab buckskin.. .. .. **$3.00**

The "Reach" Fielders' Glove No. OOW.

Made of fine selection of strong lightweight water-proof Indian tan buckskin. Padded with best asbestos felt and leather lined Made on our famous OB Model. Requires no breaking in

No. OOW. Each.. .. .. **$2.50**

The "Reach Special" Glove No. 04.

Made of the finest black calfskin, padded with black leather and bound with same color. This similar model to our OB, and is practical in every way. Box, sizes—13, 13, 14, 15

No. 04. Each . **$2.50**

The "Reach" Men's Fielders' Glove No. SWN.

Made of fine black colored calfskin, padded with asbestos felt, web thumb, patent inside hump and patent deep pocket, welted. This glove is made on our celebrated OB pattern Packed one in a box

No. SWN. Each **$2.00**

The "Reach" Fielders' Glove No. 56.

Made of fine mouse colored buckskin, padded with best asbestos felt, welted, leather lined, patent inside hump and patent deep pocket, web thumb Packed one in a box.

No. 56. Each **$2.00**

The "Reach" Men's Fielders' Glove No. 2L.

Made of excellent quality drab suede, buck, welted, padded with best felt, leather lined, patent inside hump and patent deep pocket, web thumb. Packed one in a box.

No. 2L. Each.. .. .. **$1.50**

The "Reach" Men's Fielders' Glove No. 2G.

Made of excellent quality genuine horsehide, drab color. Padded with best felt. Similar to our OB pattern; web thumb. Packed one doz. in box

No. 2G. Each. **$1.25**

The "Reach" Men's Fielders' Glove No. 3G.

Made of excellent quality drab suede buck, welted, extra heavy padded with best felt, patent deep pocket, web thumb Made on our celebrated OB pattern. Packed one in a box

No. 3G. Each.. .. .. **$1.50**

The "Reach" Men's Fielders' Glove No. 10G.

Made of fine brown tan leather, padded with best felt, web thumb and has our patent deep pocket, leather lined. Made on OB model. Packed one in a box.

No. 10G. Each **$1.00**

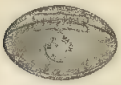
The "Reach" Men's Fielders' Glove No. 10N.

Made of fine black tan leather, padded with best felt, web thumb and has our patent deep pocket, leather lined. Made on OB model. Packed one in a box.

No. 10N. Each.. .. .. **$1.00**

"REACH" FOOT BALLS.

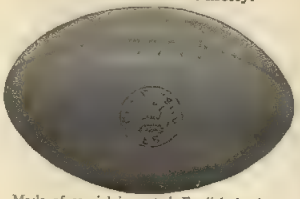
No. 5R—Rugby Match.



Made of superior American pebble grain leather, lined with best canvas, guaranteed perfect shape. Put up complete with bladder, lacing needle and leather lace. Regulation size.

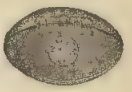
Per doz... **$24.00**

No. E5—Official Varsity.



Made of special imported English leather. Per doz **$45.00**

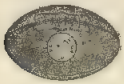
Rugby No. 5F—Scholastic.



Made of fine American pebble grain leather. Put up complete with pure rubber bladder, lacing needle and leather lace. Regulation size

Per doz... **$17.50**

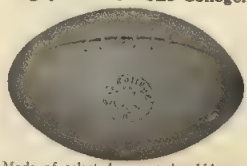
Rugby No. 5M—Practice.



Made of fine pebble leather, canvas lined and guaranteed to hold their shape Complete with pure rubber bladder Regulation size

Per doz... **$8.40**

Rugby No. D5—The College.



Made of selected imported pebble grain leather, perfect shape.

Per doz... **$36.00**

Rugby No. 5S—Amateur.

Made of the finest pebble grain leather, canvas lined and guaranteed to hold their shape. Complete with pure rubber bladder. Regulation size.

Per doz... **$10.80**

Head Harness.

No. 1 is made of grain leather, lined with best white felt. The best ventilated head harness made. Adjustable to any size head. Extra long in back to protect base of brain.

No. 1. Per doz... **$16.20**

No. 4 is made on same pattern as our No. 1, except that it has no extension on back, and is made of cheaper material. A good harness at the price.

No. 4. Per doz... **$12.00**

Nose Masks.

		Per doz.
No. 0.	Men's adjustable.	**$6.00**
No. 1.	Men's size.	**4.00**

Shin Guards.

No. 5. Men's size. Black water-proof, cane ribs, extra strong.
Per doz... **$8.00**

No. 7. Boys' size, canvas.
Per doz... **$4.00**

Rugby Foot Fall Bladders.

		Per doz.
No. 5S.	For Nos. 5M, 5S, 5F.	**$5.00**
No. 5R.	For Nos. 5R.	**6.50**
No. E5.	For Nos. D5, E5.	**7.20**

Association Bladders.

		Per doz.
No. 5X.	For Nos. 50X, 5L.	**$5.00**
No. ESA.	For Nos. 5A, ESA.	**7.20**

ASSOCIATION FOOT BALLS

Nos. 5A and 50X.

The "Match" No. 5A.

Made of the finest American pebble grain leather in eight sections.

No. 5A. Per doz. **$36.00**

Youths' No. 50X.

No. 50X. Per doz **$10.80**
Youths', sheepskin Regulation size.

Nos. ESA and 5L.

The "Soccer" No. ESA.

Made of finest imported leather. Guaranteed perfect shape

No. ESA. Per doz. **$45.00**

The "Association" No. 5L.

Made of fine American pebble grain leather with button ends. Put up complete with pure rubber bladder, lacing needle and leather lace.

No. 5L. Per doz **$27.00**

PROTECTORS, PLATES AND PUBLICATIONS.

THE "REACH" INFLATED CATCHERS' BODY PROTECTORS.

Gray patent. Made of best rubber, inflated with air.

Nos. 1P, 2AP and 1BP.

The "Reach League" Men's Catchers' Protector No. 1P.

Made of best material, quality guaranteed. Full size.

No. 1P. Each $5.00

The "Reach Special" Men's Catchers' Protector No. 2AP.

Made of good material. Full size.

No. 2AP. Each $3.00

The "Reach" Men's Body Protector No. 2P.

Made of heavy canvas, with heavy reeds to break the force of blow. Padded with best felt. A thorough protector for the catcher

No. 2P. Each $1.50

The "Reach Amateur" Youths' Catchers' Protector No. 1BP.

Made same as our No. 1AP, only youths' size.

No. 1BP. Each $2.50

SHOE PLATES.

The "Reach League" Toe and Heel Plates.

Nos. 2T and 2H Toe and Heel Plates are made of the best quality steel, have beveled edges and specially sharpened points. Guaranteed not to bend or break. Are light in weight

No. 2T. Toe Plate. . . . . Per pair $0.25

No. 2H. Heel Plate . . . . . " .25

The "Reach" Pitchers' Toe Plate No. 5T.

Worn on the toe and affords a thorough protection to the shoe, and at the same time a most valuable assistant in pitching. Made for right or left shoe. Used by all professionals.

No. 5T. Aluminum. . . . . Each $0.25

REACH'S PUBLICATIONS.

The "Reach" BaseBall Guide.

Contains everything you want to know about Base Ball

Complete records of the American, National and Minor leagues.

Keep posted on the game by reading the "Reach" Guide.

Each. $0.10

The "Reach" Art of Curve Pitching.

No Base Ball player should be without a copy as it affects batsmen as well as pitchers

Considered by all competent judges the best work of the kind ever published. The various curves are very plainly illustrated, and the true philosophy of the art of curve pitching satisfactorily explained. Also gives full and explicit directions how to puzzle batsmen.

Each. $0.15

The "Reach" Art of Batting.

Of interest to all ball players. No one need be a poor batsman, if instructions are followed

A book of instructions for amateurs, containing useful hints and directions for acquiring a scientific knowledge of the art. By Edward J. Prindle, author of The Art of Curve Pitching

Each. $0.15

REED COMBINATION PIPE VISES.

DESCRIPTION, FIG. 8627.

The front single pipe jaw is reversible so that when it is worn you can loosen the set screw, reverse it, and have a new front jaw.

The jaws are milled from solid tool steel bars and tempered in oil to give toughness.

PRICES, FIG. 8627.

No.	31	32	33
Width jaw, inches	3½	4½	5
Weight, lbs.	80	70	125
Capacity pipe, inches	½ to 3	½ to 3	½ to 4
Base	Swivel	Swivel	Stationary
Vise, each	$16 00	$30 00	$38 00
Jaws, set of 2	1 50	1 75	2 00

WITH SOLID PIPE JAW

FIG. 8627.

WITH SECTIONAL PIPE JAW

FIG. 8628.

DESCRIPTION FIG. 8628.

This Vise is in mechanical respects the equal of the machinist's Vise, and has the added convenience of a set of pipe jaws.

They can be easily and quickly removed when the nature of the work to be held in the parallel jaws requires it.

PRICES, FIG. 8628.

No.	41	42	43
Width jaw in.	3½	4½	5½
Weight, lbs.	45	65	121
Capacity pipe, inches	½ to 3	½ to 3	½ to 4
Base	Swivel	Swivel	Stationary
Vise, each	$16.00	$26 00	$38 00
Jaws, set of 2	1.50	1 75	2 00

BARRETT PATENT STEEL BAR COMBINATION PIPE VISES.

PRICES, FIG. 8629.

SWIVEL BOTTOM.

No.	1	2	3½	4½
Jaws open, inches	4½	4½	5	6
Holds pipe, inches	½ to 2	½ to 3	½ to 4	½ to 6
Weight, lbs.	47½	80	118	169
Each	$16.00	$20.00	$22.00	$40 00

STATIONARY BOTTOM

No.	3	4
Jaws open, inches	5	6
Holds pipe, inches	½ to 4	½ to 6
Weight, lbs.	106	145
Each	$28 00	$35 00

FIG. 8629, NOS 1 AND 2.

SMITH COMBINATION PIPE VISES.

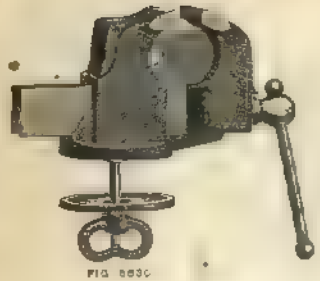


FIG. 5630

PRICES FIG. 5630

Pipe Capacity, Inches	Each
1	$ 6 00
1½	9 00
2	12 00

ARMSTRONG COMBINATION PIPE AND BENCH VISES.

MALLEABLE IRON

WITH SOCKETS FOR LEGS

DESCRIPTION FIG. 5631

Illustration shows a Vise combining new and useful features. Being provided with detachable sockets for legs it can be used on a bench or become a Portable Vise [illegible] taking in pipe for [illegible]

We do not furnish the pipe except where specially ordered when an extra charge will be m

Regular height work bench takes 3 feet 10 inches for each leg.

Prices given below

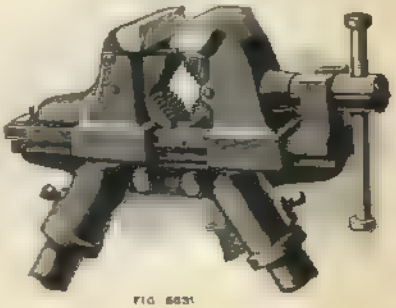


FIG. 5631

FOR BENCH

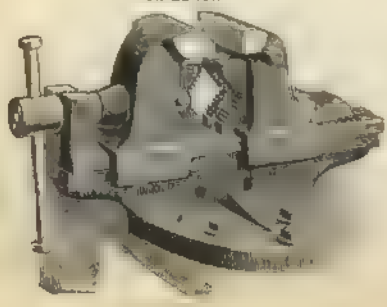


FIG. 5632

PRICE FIG. 5631

Vise takes pipe 0 to 3½ inches, with sockets for legs, each [illegible] inches $18 00

PRICE FIG. 5632

Vise takes pipe 0 to 3 inches, without sockets for legs, each [illegible] $12 00

THE FAIRBANKS COMPANY

RELIANCE MOTOR TRUCKS

For Freight and Passenger Service

Detroit, Mich., July 14, '06.

Reliance Motor Car Co.,
Detroit, Mich.

Gentlemen:

Replying to your inquiry, we take pleasure in stating that the three ton Truck which we purchased of you some time ago, is giving us entire satisfaction, and the results which we obtain with it are greatly exceeding our expectations. With one man it has done the work heretofore requiring three or four horse drawn trucks, with a driver for each.

When you take into consideration the fact that the man driving the Truck had been driving one of our horse drawn trucks, and had no experience whatever with Automobiles or machinery of any kind, and the Truck has not been out of service a moment, or required any repairs whatever, we consider its performance very remarkable. The cost of gasoline has been very nominal.

Making long hauls to out-lying districts has created the necessity for some quicker service than is possible to obtain with horse drawn trucks. We find the Motor Truck can make round trips to out-lying districts in an hour that would require a half day for a horse drawn truck.

We believe that in your Motor Truck, we have found the method for delivery of material which is destined to take the place of horses, and solves the problem of rapid transportation of freight in cities.

Wishing you the success which your product deserves,

Very truly yours,
THE VINTON COMPANY.

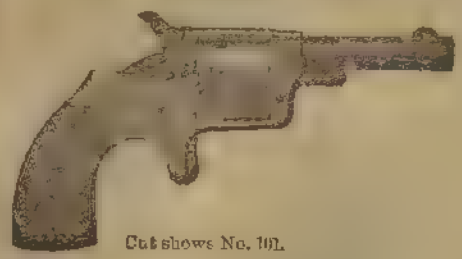
Reliance Motor Car Co.

DETROIT, -:- MICHIGAN, U. S. A.

New York, Quigley & Sanders, 113 W. 37th St.,
Boston, James E. Bradford, 43 Columbus Ave.,
Philadelphia, Colonial Auto Co., 15th and Oxford Sts.,
Chicago, C. W. Babcock, 610 Marquette Bldg.,
St. Louis, Commercial Motor Car Co., 1390 Olive St.

REVOLVERS.

In ordering Revolvers on this page, the Marginal Number to the Left is sufficient to designate them



Cut shows No. 101.

Cut shows No. 51.

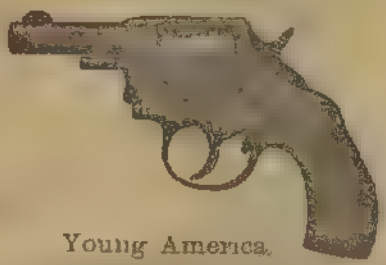
		EACH
No. 101	**Royal**, 22 Short or Long, 7 Shots, Rubber Saw Handle, Plain Cylinder, Weight, about, 7 oz.,	$1 40
Baby Hammerless	[illegible] Nickel Plated, Rubber Handle, Weight, about, 4½ oz., [illegible] Manufacturer's Special Parts for Vest Pocket or Latches,	
No. 51	[illegible]	EACH
No. 051	[illegible] Nickel Plated,	$3 00
No. 51/F	[illegible]	4 00
No. 051/F	[illegible] Powder R. F. Cartridges, with Pearl Stock,	5 00
	[illegible]	5 50

Cut shows No. 102.

Cut shows No. 106.

Rim Fire, 5 Shots, 32-100 Caliber, Nickel Plated.

		EACH.
No. 102	32 Short or Long, Rubber Handle, Plain Cylinder, Round Barrel, Weight, 9¾ oz.,	$1 40
No. 106—32	" " Saw Handle, Fluted Cylinder, Octagon Barrel, Weight, 10¾ oz.,	3 00



Young America.

Double Action, Solid Frame, Nickel Plated, 2 in. Barrel, 22 Caliber, Rim Fire, Short or Long.

	EACH.
7 Shots, Weight, 7¾ oz.	
No. 222—Rubber Handle,	$2.50
	PER PAIR
Pearl Handles,	$1.50

32 S. & W. Caliber, Central Fire.

	EACH.
5 Shots, Weight, 9 oz.	
No. 322—Rubber Handle,	$2.50

Double Action, Octagon Barrel, Rubber Handle, Nickel Plated, Vest Pocket Style.

	EACH.
No. 321½VP—32 Caliber, 1¾ in. Barrel, Central Fire, Weight, 5½ oz., 5 Shots, Shoots S. & W. C. F. Cartridges,	$2 50

Pearl Handles, for the above, per pair, extra, $2.50.

REVOLVERS

In Ordering Revolvers on this Page, the Marginal Number is sufficient to designate them.

Double Action, Octagon Barrel, Rubber Handle.

Nickel Plated

				EACH
No. 322½RF	2½ in. Barrel, Rim Fire, Weight, 16 oz., 6 Shots, Shoots Short or Long R. F. Cartridges,	32 Caliber,		$2 50
No. 322½	2½ in. Barrel, Central Fire, Weight, 16 oz., 6 Shots, Shoots S. & W. Central Fire Cartridges,			2 50
No. 324½	4½ " " " " 17 " 6 " " " " " "			3 00
No. 326	—6 " " " " 18 " 6 " " " " " "			3 50
No. 382½	2½ in. Barrel, Central Fire, Weight, 15 oz., 5 Shots, Shoots S. & W. Central Fire Cartridges,	38 Caliber,		2 50
No. 384½	4½ " " " " 16 " 5 " " " " " "			3 00
No. 386	—6 " " " " 17 " 5 " " " " " "			3 50
No. 442½	2½ in. Barrel, Central Fire, Weight, 19 oz., 5 Shots, Shoots 44 Wetley Central Fire Cartridges	44 Caliber,		3 00
No. 444½	4½ " " " " 20 " 5 " " " " " "			3 50
No. 446	—6 " " " " 21 " 5 " " " " " "			4 00

Blued.

No. 0382½	2½ in. Barrel, Central Fire, Weight, 15 oz., 5 Shots, Shoots S. & W. Central Fire Cartridges,	38 Caliber,		$3 00
No. 0384½	4½ " " " " 16 " 5 " " " " " "			3 50
No. 0442½	2½ in. Barrel, Central Fire, Weight, 19 oz., 5 Shots, Shoots 44 Wetley Central Fire Cartridges,	44 Caliber,		4 00
No. 0444½	4½ " " " " 20 " 5 " " " " " "			4 50

Pearl Handles for above, per pair, $2.20.

Safety Hammer, Double Action, Octagon Barrel, Rubber Handle.

Nickel Plated.

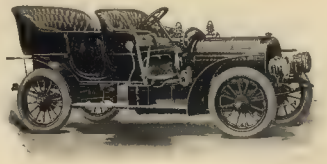
				EACH.
No. 1322½	—2½ in. Barrel, Central Fire, Weight, 16 oz., 6 Shots, Shoots S. & W. Central Fire Cartridges;	32 Caliber,		$2 50
No. 1382½	—2½ in. Barrel, Central Fire, Weight, 15 oz., 5 Shots, Shoots S. & W. Central Fire Cartridges,	38 Caliber,		2 50
No. 1384½	—4½ " " " " 16 " 5 " " " " " "			3 00
No. 1386	—6 " " " " 17 " 5 " " " " " "			3 50

Pearl Handles for above, per pair, $2.20.

ROYAL TOURIST

POINTS

Runs quietly. Costs less for repairs than any motor car built anywhere. Steers easily. Perfect control of motor. Certainly is fast. Is built with care.



We have a full description of 1906 models ready to mail to you if you will send us your address. Will also mail booklet explaining performance of '06 model in Vanderbilt Trial Race.

The Royal Motor Car Co.

CLEVELAND, OHIO

AGENTS: C. A. Duerr & Co., New York, N. Y. G. J. Dunham, Boston, Mass. The McQuiffee Automobile Co., Chicago, Ill. G. W. Caplin, Minneapolis, Minn. Automobile Supply Co., Lim., Toronto. Motor Shop, Philadelphia, Pa. Westminster Automobile Co., St. Louis, Mo. Standard Automobile Co., Pittsburg, Pa. Amos Pierce & Co., Syracuse, N. Y. Thompson Schoeffel Co., Rochester, N. Y. Member A. L. A. M.

"Sandow" Spring Grip Dumb-bells

Child's (3 spring)	$2.50 pr.
Boys' (4 spring)	3.60 pr.
Ladies' (5 spring)	5.00 pr.
Men's (7 spring)	6.00 pr.

New Model Indian Clubs

The above model clubs are made of selected and seasoned maple Polished, from 1 to 3 lbs. weight.

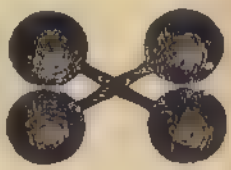
Size.....	½	¾	1	1½	2	2¼	3	lbs.
Per pair.	50c	60c	80c	$1.00	$1.20	$1.30	$1.50	

Wooden Dumb-bells

Size	¼	½	1	1½ lbs.
Per pair	40c	50c	60c	70c

Iron Dumb-bells

Per lb. 10c



The Whitely Exerciser

Weighs less than two pounds; can be put anywhere in a moment, and removed as quickly; may be carried in your pocket; is noiseless, durable, and all parts warranted. No electricity.

It acts as though alive! Exercises all the muscles, automatically adjusts itself to the strength of the person using it, and takes the place of several machines costing many times as much,

The Book of Instruction

Is written from the standpoint of a business man; is illustrated, and points the way for busy people to become well and strong, and remain so even though, like the author, they have inherited poor health.

Style 0	—Fitted with wooden pulleys	$3.00
" 1	—Cone bearing pulleys, adjustable, noiseless	4.20
" 2	—Gymnasium machine, full nickel	5.60

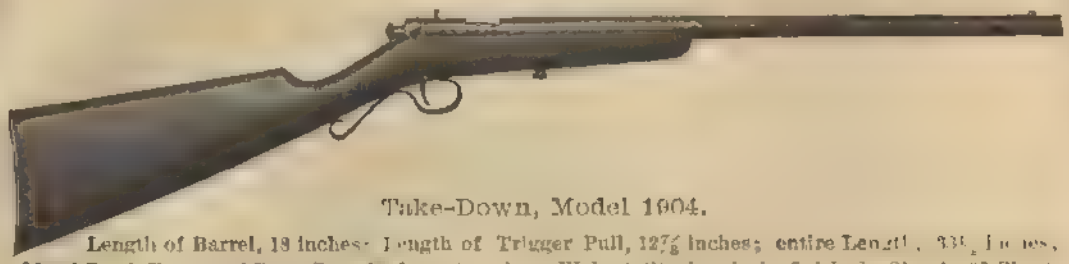
Wrist Machine

Strengthens and develops the fingers, hands, wrists, arm and forearm. Cures cramps and stiffness of joints.

No 1	—Wood handle. Price	$1.20
" 2	—Cork handle. "	2.00

See Terms page 3, and Discount sheet next back cover.

SAVAGE JUNIOR, SINGLE SHOT RIFLE.



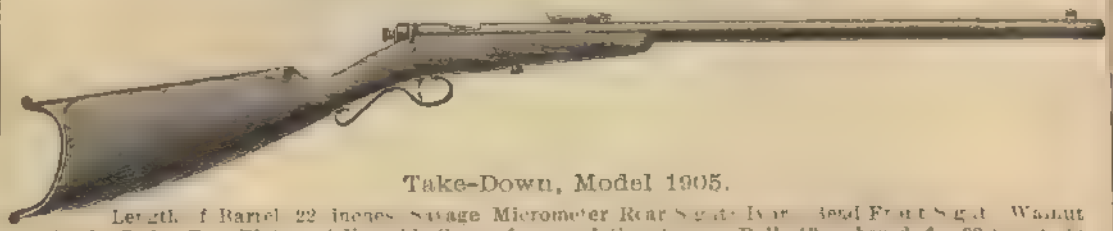
Take-Down, Model 1904.

Length of Barrel, 18 inches; Length of Trigger Pull, 12⅞ inches; entire Length, 33½ inches, Metal Bead Front and Peep Rear Sights; American Walnut Stock, nicely finished; Shoots 22 Short, 22 Long and 22 Long Rifle Cartridges.

	EACH
No. S,04 Round Barrel; Weight, about 3 lbs....	$4.00

One in a neat Parcel on Box with Cleaning Rod,
Ten in a Case; Weight, per Case, about 50 lbs.

SAVAGE "TARGET MODEL" SINGLE SHOT RIFLE.



Take-Down, Model 1905.

Length of Barrel 22 inches; Savage Micrometer Rear Sight; Ivory Bead Front Sight; Walnut Stock; Swiss Butt Plates; Adjustable Screw for regulating Trigger Pull; Chambered for 22 Short, 22 Long and 22 Long Rifle Cartridges. The Adjusting Screw is located on the under side of the Trigger and may be reached instantly by simply taking off the Stock

	EACH
No. T/05—Round Barrel; Weight, about 4¾ lbs	$7.50

Ten in a Case; Weight, per Case, about 60 lbs

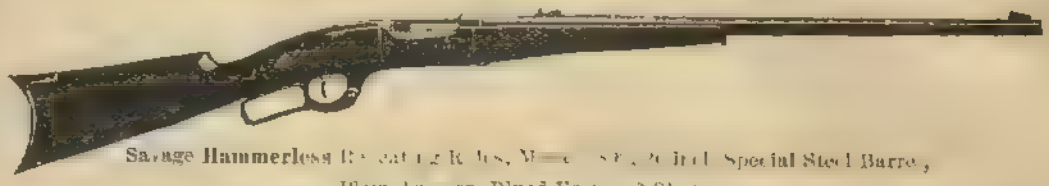
Model 1905 Single Shot Rifle, Style "C" Take-Down.

Length of Barrel, 22 inches; Adjustable Rear and Metal Bead Front Sight; "Target Model" Shot Gun Walnut Butt Stock; Length of Stock, 13 inches; Adjustable Screw for regulating Trigger Pull; Shoots 22 Short, 22 Long and 22 Long Rifle Cartridges.

	EACH
No. C1905—Round Barrel, Weight, 4¾ lbs.	$8.50

Ten in a Case; Weight, per Case, 60 lbs

SAVAGE RIFLES AND CARBINES.



Savage **Hammerless** Repeating Rifles, Model 1899, 20 inch Special Steel Barrel, Plain Trigger, Blued Frame, 6 Shots.

		EACH
No. 303—**Octagon Barrel, Shoots 303 Savage Cartridges;** Weight, about 8 lbs.		$21 00
No. 0303 **Round Barrel, Shoots 303 Savage Cartridges;** Weight, about 7½ lbs.		20 00
No. S/0303—Same as No. 0303, except 22 inch Barrel and Shot Gun Butt		20 00
No. 3030 **Octagon Barrel, Shoots 30 30 Winchester Cartridges;** Weight, about 8 lbs.		21 00
No. H 3030 **Half Octagon Barrel, Shoots 30 30 Winchester Cartridges;** Weight, about 7½ lbs.		21 50
No. HS 3030 **Half Octagon Barrel, Shot Gun Butt Stock, Shoots 30 30 Winchester Cartridges;** Weight about 7½ lbs.		21 50
No. 03030 **Round Barrel, Shoots 30 30 Winchester Cartridges;** Weight, about 7½ lbs.		20 00
No. S/2535—**Octagon Barrel, Shoots 25 35 Winchester Cartridges;** Weight, about 8 lbs.		21 50
No. S 02535 **Round Barrel, Shoots 25 35 Winchester Cartridges;** Weight, about 7½ lbs.		20 00
No. S 3240 **Octagon Barrel, Shoots 32 40 B. and M. Cartridges;** Weight, about 8 lbs.		21 50
No. S 03240 **Round Barrel, Shoots 32 40 B. and M. Cartridges;** Weight, about 7½ lbs.		20 00
No. S 3855—**Octagon Barrel, Shoots 38 55 B. and M. Cartridges;** Weight, about 8 lbs.		21 50
No. S 03855 **Round Barrel, Shoots 38 55 B. and M. Cartridges;** Weight, about 7½ lbs.		20 00
No. SS 3855 Same as No. S 3855, except 22 inch Barrel and Shot Gun Butt		20 00
No. F 0303 "Featherweight," 20 inch **Round Barrel, Shoots 303 Savage Cartridge;** Weight, about 6 lbs.		25 00
No. F 03030 "Featherweight," 20 inch **Round Barrel, Shoots 30 30 Winchester Cartridge;** Weight about 6 lbs.		25 00
No. F 02535 "Featherweight," 20 inch **Round Barrel, Shoots 25 35 Winchester Cartridge;** Weight about 6 lbs.		25 00

Carbines.

Savage **Hammerless** Repeating Carbine, Model 1899, 20 inch Special Steel Barrel, Plain Trigger, Blued Frame, 6 Shots.

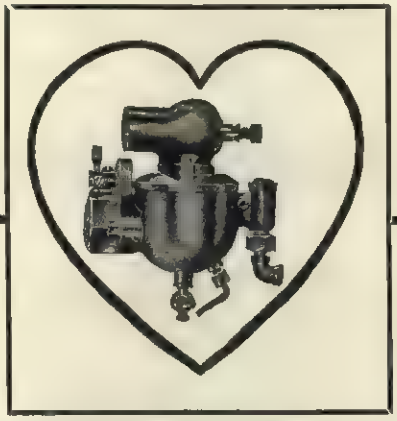
	EACH
No. 0303 C **Round Barrel, Shoots 303 Savage Cartridges;** Weight, about 7½ lbs.	$20 00
No. 03030 C—**Round Barrel, Shoots 30 30 Winchester Cartridges;** Weight, about 7½ lbs.	20 00
No. S/02535 C **Round Barrel, Shoots 25 35 Winchester Cartridges;** Weight, about 7½ lbs.	20 00
No. S 03240 C—**Round Barrel, Shoots 32 40 B. and M. Cartridges;** Weight, about 7½ lbs.	20 00
No. S 03855 C **Round Barrel, Shoots 38 55 B. and M. Cartridges;** Weight, about 7½ lbs.	20 00
Swivel and Sling Strap, for Model 1899	1.50

Savage Magazine Empty.

Savage Magazine Rifle as a Take-Down.

Savage Magazine Full.

THE HEART OF THE AUTOMOBILE



The Schebler Carbureter

STANDARD OF THE WORLD

¶ 1,094 3-16 miles in twenty-four hours continuous running on a circular track; 1,000 miles in 21:58:00 4-5 continuous running on a circular track, breaking all world's records by 1:35:19 1-5.

¶ This is the world's record travels of a National car fitted with a SCHEBLER carbureter at the Indianapolis Fair Ground Tracks, Nov. 16th and 17th. Hundreds of miles were reeled off with scarcely a variation of a second in the time of each.

¶ Is it any wonder that eighty-three of the largest marine and automobile engine builders in the United States and Canada are equipping their motors with the SCHEBLER?

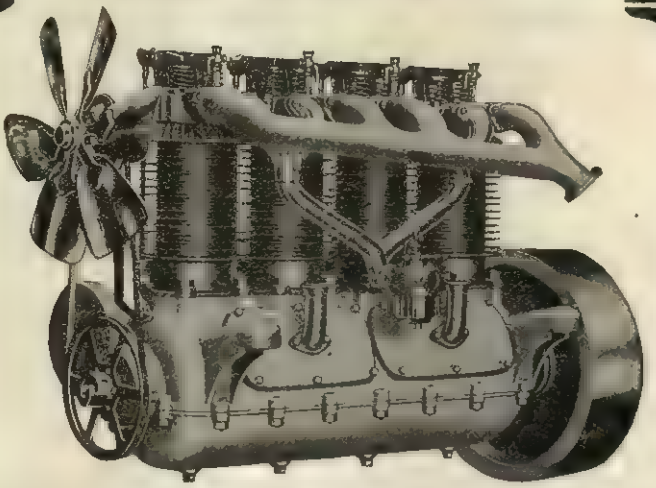
¶ A carbureter that gives a perfect mixture at all engine speeds regardless of weather conditions is truly "The Heart of the Automobile."

WHEELER & SCHEBLER, Manufacturers **Indianapolis, Ind., U. S. A.**

AGENCIES IN ALL THE PRINCIPAL CITIES OF THE WORLD

E. J. EDMOND, 75 & 77 W 44th St., New York City
POPE M'F'G. CO., Hartford, Conn.
EXCELSIOR SUPPLY CO., Chicago, Ill.
AUTOMOBILE SUPPLY CO., Chicago, Ill.
BECKLEY-RALSTON CO., Chicago, Ill.
MOTOR CAR SUPPLY CO., Chicago, Ill.
E. B. BELCHER, 26 Green St., Malden, Mass.
J. W. LATHROP & CO., Mystic, Conn.
HUB AUTOMOBILE EXCHANGE, Dorchester, Mass.
NATIONAL ELEC. SUPPLY CO., Washington, D. C.
G. D. THORNDYKE, State of Maine agent, Portland Maine.
JOS. BRASSARD, Central Falls, R. I.
WALLACE BROS. CO., Norfolk, Va.
PAUL P. RIPPIEN, 1907 Race St., Philadelphia, Pa.
SMITH ELECTRICAL ENGINEERING CO., Watertown, N. Y.
KANSAS CITY MOTOR CAR CO., Kansas City, Mo.
NEUSTADT AUTO & SUPPLY CO., St. Louis Mo.
PHŒNIX AUTO SUPPLY CO., 3932 Olive Street, St. Louis, Mo.
C. J. SMITH & COMPANY, 354 St. Peters Street, St. Paul, Minnesota.
E. A. COMBE, 1618 Court Place, Denver, Colorado.
F. C BOWLUS, 332 Baronne St., New Orleans, La.
CHANSLOR & LYON MOTOR SUPPLY CO., 930 So. Main St., Los Angeles, Cal.
CHANSLOR & LYON MOTOR SUPPLY CO., 503 Golden Gate Av., San Francisco, Cal.
WILSON & COMPANY, Ottawa, Ontario, Can.
McCULLOCH & ROSWELL, Winnipeg, Manitoba
CANADA CYCLE MOTOR CO., Toronto Junction, Can.
SCHUMAN CARRIAGE CO., Honolulu, T. H.
GEO. NEILL & CO., 38 Fenchurch St., London, England

Carrico AIR COOLED ENGINE -works 365 days a year.



THE TEST TELLS

WHAT THE CARRICO AIR-COOLED ENGINE DID

The car fitted with this remarkable 20-24 H P. Engine covered 400 miles without a stop, Aug. 24th, consumed only 33 gallons of fuel - total weight of load being 3200 lbs.

It never overheated or pre-ignited—Temperature averaged 90°

Engine in perfect condition at end of run.

Why use water tanks, pumps, etc., when you can get an engine to do what the "CARRICO" does?

Write for 1907 booklet—Also for an Expert's description of Run—it's worth reading.

SPEED CHANGING PULLEY CO.

INDIANAPOLIS, IND.

SEAMLESS STEEL LAMPS.

COPPERIZED AND NICKEL PLATED.

DESCRIPTION, FIGS. 9675 AND 9676.

These Lamps are durable, nonexplosive, made with seamless drawn bodies, will never leak, and are perfectly safe for burning kerosene. Can also be used for gasoline and will not give out. They are heavily copper plated inside to prevent rusting and free from becoming gritty.

NO. 22

FIG. 9675.

NO. 23

FIG. 9676.

PRICES, FIGS. 9675 AND 9676.

No.	Capacity Pints.	Diameter Inches.	Per Dozen.
22, copperized steel	1	3½	$9 00
23, copperized steel	1½	4	12 00
220, nickel plated	1	3½	12 00
230, nickel plated	1½	4	16 00

JACKET LAMPS.

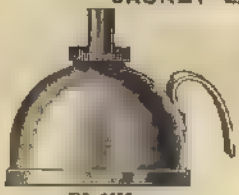


FIG. 9677.

COPPERIZED COLD ROLLED STEEL.

PRICES FIG. 9677.

No.	Capacity Pint.	Diameter Inches	Per Dozen.
20	⅛	3⅛	$8 00
20½	¼	3⅝	9 00
21	1	4⅛	12 00

PETTICOAT LAMPS.

PRICES, FIG 9678

	Tinned.	Galvanized
1 dozen	$1 60	$1 60
6 dozen	8 50	9 00
1 gross	16 00	17 00
5 gross	75 00	80 00

FIG. 9678.

EVERLASTING BRAZED STEEL HAND LAMPS AND BURNERS.

CONVENIENT FOR THE LATHE AND PLANER.

LAMP.

FIG. 9679

BURNERS.

NO. A

FIG. 9680.

NO. B.

FIG. 9681.

NO. C

FIG. 9682

NO. D.

FIG. 9683.

PRICES, FIG. 9679.

With any style burner Figs. 9680 to 9683.

No.	Capacity. Pint.	Per Dozen.
180	⅛	$9 00
181	¼	6 50
185	1	7 00

The Hand Lamp, Fig. 9679, can be furnished with any of the above Burners.

When no special Burner is mentioned, No. A, Fig. 9680, will be shipped.

Burners B, C and D are interchangeable.

COAL BUNKER LAMPS.

NO 341.

FIG. 9684.

PRICES, FIGS. 9684 TO 9686.

No.	Per Dozen.
341, capacity ½ pint, galvanized iron	$2 50
335, capacity 1 pint, extra heavy, galvanized iron	6 50
350 capacity over 2 pint, extra heavy, galvanized iron	9 00

NO 356

FIG. 9685.

NO 355.

FIG. 9686.

FURNACE LAMPS.

FIG. 9687.

DESCRIPTION, FIGS. 9687 AND 9688

This Torch and Lamp are made in one casting. They are practically indestructible.

PRICES, FIG. 9687

No. 1, cast iron japanned, holding 3 pints, per dozen $5.00

No. 2 cast iron japanned holding 5 pints, per dozen 7 50

No. 1 extra wicks, per dozen 55

No. 2 extra wicks, per dozen 90

PRICES FIG. 9688

No. 0, cast iron japanned, holding half pint per dozen $3.00

Extra wicks 20

HAND TORCH.

FIG. 9688

MALLEABLE IRON TORCHES.

FIG. 9689

PRICE, FIG. 9689.

No. H88, capacity 1 pt. per doz. ... $4.00

FIG. 9690

PRICE, FIG. 9690

No. H89, capacity ½ pt., per doz. ... $4.00

FIG. 9691.

PRICE, FIG. 9691

No. H90, capacity ¼ pt., per doz. .. $4.00

LOCOMOTIVE TORCHES.

FIG. 9692.

Showing top removed. Fig. 9692.

PRICE, FIG. 9692.

No. H87, capacity ¾ pint, per dozen ... $4.00

FIG. 9693

PRICES FIG. 9693.

Brass body, iron base, per dozen $21 00

Tin body, iron base, per dozen 12 00

MALLEABLE IRON ENGINE TORCHES.

FIG. 9694

PRICE FIG. 9694.

Per dozen $5.00

through two adjustable ball and socket joints to a lengthened ball end steering knuckle arm. Its action is positive and is perfectly free, as there is no jogging caused by the action of the springs and the usual longitudinal connecting links. The steering column carries the throttle and spark levers directly beneath the steering wheel.

The dash is hollow pressed steel, housing the spark coil and other fittings. The bodies are carefully built in their own factory and are distinctly original, having many improved features. The front seats are individual. The tonneau is wide and roomy and is detachable. The best of leather, hair, cushion springs and other materials go into the upholstering.

Two gas head lights with generator, two side oil lamps, tail light, dragon horn, and necessary wrenches complete the equipment.

Big Knox air-cooled truck hauling two freight cars, this truck was built by Knox Automobile Co., Springfield, Mass., and recently shipped to Marshall Field & Co., of Chicago. This demonstration of the truck's power was made by employes of the Knox Co. just to satisfy their own curiosity as to the car's pulling ability. The two freight cars weigh 36 tons, but the Knox truck pulled them with ease. As there was snow on the ground, a little sand was sprinkled to give the wheels a grip, but no chain or any attachment was put on the wheels. Within ten minutes the truck started up the cars, the tracks being slightly upgrade at this point. It was afterward discovered that the brakes were partially set on one of the cars.

"Sheffield" Inspection Cars.

Fairbanks, Morse Railway Car Co., Franklin and Monroe Streets, Chicago, Ill., are now putting out a line of gasoline inspection cars which are also largely used by circulation de-

"Sheffield" Inspection Car, No. 15

partments of newspapers, which are thus made independent of railway schedules.

The Sheffield line of railway cars includes a wide variety of styles. No. 15 is a 2-seated car weighing 1000 lbs. The seats are upholstered in leather and the steel and wood frame of the car rests on semi-elliptic springs, making very comfortable riding. The 22-inch wheels have wood centres and steel flanged rims. The frame is of steel and wood. Axles are of steel, 1¾ in. in diameter and run on roller bearings, being enclosed in a 2¼-in. tube. A trussed brake with wooden shoe is operated by a foot lever.

Power is furnished by a single cylinder, 6 H. P. gasoline motor, jump spark ignited, and is transmitted through a 2-speed and reverse, planetary change speed gear. The change speed gear runs in oil and is substantially constructed. Speeds of from 3 to 30 miles per hour can be obtained. An automatic force feed lubrication system is employed, requiring no other attention than the weekly filling of the oil tank.

No. 15 is also furnished with one seat and a baggage rail surrounding the rear deck; also with a canopy top.

The Eclipse Machine Company, Elmira, N. Y., are now prepared to furnish their Morrow Hub Coaster Brakes for either chain or belt driven motor cycles and are doing an excellent business on the same.

Watch the Important Points of the

1907 Torpedo Motor Cycles

Our Spring fork takes the place of a 5 inch tire, 26 inch wheels, 2¼ tires, direct chain drive, 2¼ h. p., motor 6 inches from the ground, long wheel base, built for speed and comfort.
Send for advance sheet.

Hornecker Motor Manufacturing Co.

Whiting, Ind., U. S. A.

SHELBY

SEAMLESS STEEL TUBING
ONLY TUBE MADE SUITABLE
FOR BICYCLE CONSTRUCTION
SEND FOR OUR ILLUSTRATED

ALL ROADS ARE EASY WHEN THE STAR

THE STAR

BALL RETAINER

Is Used

With millions in daily use, it has stood the test for more than five years, and is adaptable to ball bearings of any kind. If you are users of ball bearings, we would be pleased to hear from you and mail you our catalog with the latest information, which we know would be profitable and interesting to you.

THE STAR BALL RETAINER CO., LANCASTER, PA., U. S. A.

SIMPLEX

Motorcycle

Single or Double Cylinder,
Battery or Magneto Ignition. Very Low Frame.
Imported Belt Transmission.
Send for Catalogue.
Motors and Accessories Furnished the Trade

PROSPECT MOTOR MFG. CO., 7 & 9 Park Place, Brooklyn, N.Y.

BEST HUBS MADE

Thousands of Jobbers Dealers, Manufacturers and Riders say so too.

E. T. HARRIS

531-545 West 15th St., Chicago

Harris Adjustable Repair Cones, Hexagon Nuts and Axles, Sulky Hubs, Motor Cycle Front Hubs, R. M. Attachments, etc., etc.

All goods Jobbers handle

THE SARTUS

Ball Retainer

(Brought Out in 1896)

BEST ANTI-FRICTION

THE SARTUS BALL BEARING CO.

155 Spring Street, NEW YORK CITY

SIMPSON COACHMAKERS' VISES.

PRICES FIG 6636.

STATIONARY BOTTOM

No.	40	41
Width of jaws, inches	6	4
Jaws open, inches	8½	6
Weight, lbs.	4	49
Each	$9 00	$10 00

SWIVEL BOTTOM

No.	42	43
Width of jaws, inches	4	4½
Jaws open, inches	8½	6½
Weight, lbs.	46	58
Each	$11 00	$13 00

STATIONARY BOTTOM, SOLID JAW.

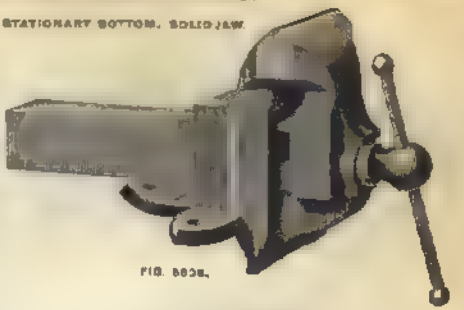


FIG. 6636.

PRICES FIG 6637.

STATIONARY BOTTOM

No.	44	45
Width of jaws, inches	4	4½
Jaws open, inches	8½	10½
Weight, lbs.	42	51
Each	$11 00	$12 00

SWIVEL BOTTOM

No.	46	47
Width of jaws, inches	4	4½
Jaws open, inches	8½	10½
Weight, lbs.	62	72
Each	$13 00	$14 00

SWIVEL BOTTOM SWIVEL JAW

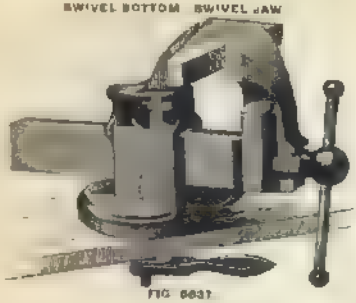


FIG. 6637.

WOODWORKERS' VISES.

SELF ADJUSTING JAW.

STATIONARY BOTTOM.

FIG. 6638.

PRICES FIG 6638.

No.	Stationary Bottom. 92	Swivel Bottom. 93
Width of jaws, inches	4½	4½
Jaws open, inches	8	8
Weight, lbs.	65	67
Each	$10 00	$11 00

SOLID JAW.

SWIVEL BOTTOM.

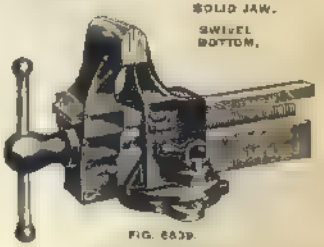


FIG. 6639.

PRICES, FIG 6639

No.	Stationary Bottom. 953	Swivel Bottom. 950
Width of jaws, inches	4½	4½
Jaws open, inches	9	9
Weight, lbs.	55	64
Each	$9 00	$13 00

ANCHOR WOODWORKERS' VISES.

NON BREAKABLE, CYLINDRICAL, WROUGHT STEEL SLIDES.

FIG. 6640.

PRICES, FIG. 6640

No.	320
Width of jaws, inches	4½
Jaws open, inches	12
Weight, lbs.	47
Each	$10 00

WOODWORKERS' VISES.

"RAPID TRANSIT" VISE
STATIONARY BOTTOM

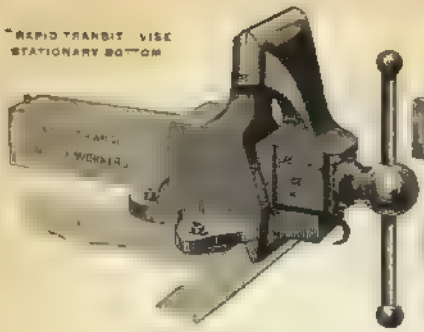


FIG. 6841 NO. 78.

"BULL DOG" VISE
SOLID JAW
SWIVEL BOTTOM

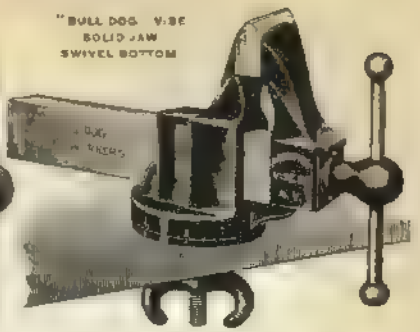


FIG. 6842, NO. 99

COACHMAKERS' SELF ADJUSTING JAW VISE
STATIONARY BOTTOM

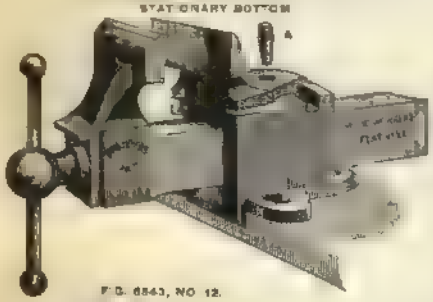


FIG. 6843, NO. 12.

PRICES, FIGS. 6840 TO 6843.

STATIONARY BOTTOM

	No.	Width Jaws, Inches.	Jaws Open, Inches.	Weight, Lbs.	Each.
Fig. 6840	88	3½	2	30	$ 8 50
6841	78	4½	3½	30	11 00
6842	99	4½	3	45	8 50
6843	12	4½	3	65	11 00

SWIVEL BOTTOM

	No.	Width Jaws, Inches.	Jaws Open, Inches.	Weight, Lbs.	Each.
Fig. 6844	27	3½	2	34	$9 00
6845	46	4½	3½	67	13 00
6846	98	4½	3	58	11 00

Swivel bottom attachment for rapid transit vise
Fig. 6841 1,75

SOLID JAW
MONARCH
SWIVEL BOTTOM.

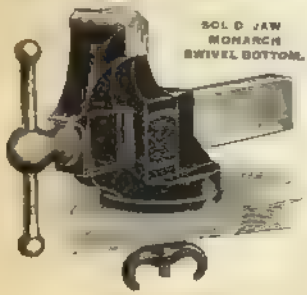


FIG. 6844 NO. 230

SOLID JAW
SHEPARD SWIVEL BOTTOM

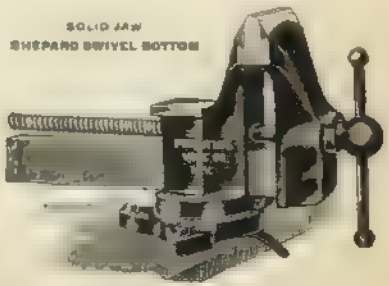


FIG. 6846, NO. 168.

PRICES FIGS. 6844 AND 6845

	Width Jaws, Inches.	Jaws Open, Inches.	Stationary Bottom. No.	Stationary Bottom. Weight, Lbs.	Stationary Bottom. Each.	Swivel Bottom. No.	Swivel Bottom. Weight, Lbs.	Swivel Bottom. Each.
Fig. 6844	4½	3	230	48	4 50	256	58	$ 6 50
" 6845	5½	7	168	53	5 25	169	58	6 00
" 6846	4½	3	68	42	6 25	89	44	7 25

THE "SIMPSON" VISE

This Vise is operated in the same manner as an Ordinary Screw Vise, or it can be instantly opened or closed the full length, by a single movement of the hand without the use of the screw, the screw being used merely to give the grip after adjusting the jaws of the work, thus combining a quick adjustment with all the advantages of the Screw Vise—points not found combined in any other Vise made.

Jewellers' and Artisans' Clamp Vise

	Width of Jaws.	Jaws open.	Weight.	Price.
No. 0.	1⅛ inches.	1¼ inches.	1½ lbs.	$2.00
" 1.	1⅝ "	1¾ "	2¾ "	2.80
" 2.	2⅛ "	2 "	5¼ "	4.50

Swinden's Machinists' Vises

We have added a line of these well-known English Vises, which are of an exceptionally high grade, and fine finish. For ease of operation and rapid adjustment, these Vises are unsurpassed.

	Width of Jaws.	Jaws open.	Weight.	Prices.
No.	S. 104-1 2⅞ in.	2½ in.	11 lbs.	$6.00 ea.
"	" " 2 3⅛ "	4¼ "	20 "	9.00 "
"	" " 3—3⅝ "	5 "	30 "	12.00 "

Thiem's Universal Vise and Repair Stand

For Manufacturing and Repairing Cycles.

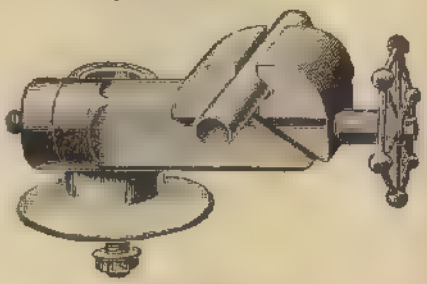
This Vise has four adjustments.

1st. Vertical, or up and down on the column.

2nd. Rotation on the column.

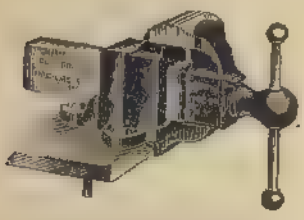
3rd. Swiveling the Vise in the socket on the column.

4th. Clamping the tube in the jaws; all of which is accomplished by loosening or fastening the one screw to which the wheel is attached. The jaws are lined with heavy soft leather so they will not mar the enamel or tube.



Price .. .. .. $10.00 each

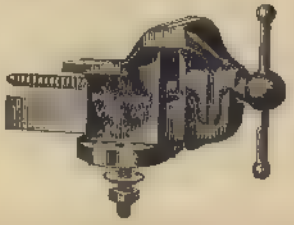
"Bull Dog" Vises



Machinists' Solid Jaw Stationary Bottom, Parallel Vise.

No.	Width Jaws.	Opens.	Weight.	List Price.
50.	3¼ in.	4 in.	22 lbs.	$ 9.00
51.	3⅝ "	5 "	28 "	11.00
52.	4⅛ "	5½ "	42 "	13.00

New Shepherd Vises



Most Convenient Cheap Vises ever offered

No.	Width Jaws.	Opens.	Weight.	List Price.
161.	2½ in.	3 in.	11 lbs.	$3.70
162.	3½ "	4 "	16 "	5.30
163.	4 "	6 "	30 "	7.50

See Terms page 3, and Discount sheet next back cover

Smith & Mabley

Incorporated

Mercedes '06

By a recent contract with The Mercedes Import Co., representing C. L. Charles, Paris, we have become **Exclusive Agents** for 1906 Mercedes automobiles in the United States and Canada.

Manufacturers of
S. & M. SIMPLEX
THE AMERICAN CAR

Licensees for
PANHARD &
RENAULT

BILLY LAMP

No equipment of a high grade car or auto boat is complete without

THE CELEBRATED BILLY LAMP

"The Original Gas Automobile Lamp"
Manufactured by "C. Billy."

For which we are sole agents in the United States.

THE HERCULES "ANTI-SKID" TIRE

Skidding and tire troubles disappear as soon as you begin to use this tire. The rubber shoe is reinforced by an exceedingly tough linen fibre outer surface, and this in turn is protected by a thread of almost indestructible raw hide. Projecting from this thread are pyramidal studs of hardened steel, placed in either two or four rows as may be required. Every bit of resiliency is preserved and besides this, it will give absolute satisfaction for that important winter work.

We are Sole Agents for the United States.

Members of the Association of Licensed Automobile Manufacturers. We exhibit in New York, at Madison Square Garden ONLY, January 13-20, 1906.

GASOLENE SOLDERING FURNACE.

FIG. 9760.

DESCRIPTION FIG. 9760

The combined tinners and plumbers' Furnace shown in Fig. 9760 is a very useful and convenient Furnace, and is made of the best cast and best material. The new burner with which they are fitted will heat a 5 pound copper in four minutes, and melt 10 pounds solder in eight minutes.

The burner being almost noiseless removes the serious objection heretofore existing against furnaces and fire pots.

PRICE, FIG. 9760

Each $8 00

DESCRIPTION, FIG. 9761

With ordinary pressure a temperature of 1,100 degrees Fahrenheit can be obtained, and much higher if desired. The reservoir is fitted to charge full of gasoline through a screw-capped inlet. The brass valve is then opened and air forced in. The reservoir may be charged while the burner is burning, allowing the operator to maintain any heat desired. When the valve is shut off and the flame lighted. When nearly burnt out open the valve and you will have an intense fire. It is adapted for druggists, laboratories and analysts.

PRICES, FIG. 9761

No. 110, with tin tank, each $7 00
" 110, with copper tank, each 8 00

LABORATORY LAMP.

FIG. 9761.

VULCAN GASOLENE TORCH.

FIG. 9762.

Absolutely automatic, can be carried in pocket.

PRICE, FIG. 9762

Each $4.00

ALCOHOL TORCHES

STANDARD PATTERN.

FIG. 9763

PRICES, FIG. 9763.

Brass, with side filler, per dozen $16 80
Brass, with side filler, per dozen 14 80
Tin, with side filler, per dozen 11 00
Tin, common, per dozen 8 00

GALLOWAY PATTERN, BLOW PIPE.

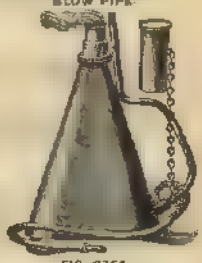


FIG. 9764.

PRICE, FIG. 9764.

Tin, per dozen $4 00

ALCOHOL BLOW LAMPS.

SELF ACTING.

FIG. 9765

PRICES FIG. 9765.

No. 1, small, per dozen $21 00
" 2, medium, per dozen 24 00
" 3, large, per dozen 30 00
" 4, extra large, per dozen 39 00

PLUMBERS' CANDLE.

FIG. 9766.

PRICE, FIG. 9766.

Tin, per dozen $6.00

THAWING. STEAMER.

FIG. 9767.

PRICE FIG. 9767

Made of heavy copper
Fits on plumbers' furnaces.

Each $5 50

GAS FITTERS' PROVING PUMP.

WITH SPRING OR MERCURY GAUGE

FIG. 9768.

PRICES, FIG. 9768.

No.	0
Diameter cylinder inches	3
Stroke inches	12
Displacement per stroke, cubic inches	81
This size [illegible] inch	[illegible]
Brass [illegible]	$4 00
[illegible] spring gauge (or mercury gauge as ordered) either cup, each	
[illegible]	25 00
Spring gauge each	9 00
Mercury gauge each	10 00
Rubber plunger each	5 00
Hose per foot	35

PLUMBERS' BRASS FORCE PUMPS.

DESCRIPTION FIG. 9769

This Force Pump may be operated at low pressure [illegible] 60 lbs. per sq. inch. For removing [illegible] from pipe it is placed [illegible] water, and [illegible] screwed [illegible] pipe base. For [illegible] three feet of hose and [illegible] that may be readily [illegible] to any ordinary [illegible] Pump is very compact and may easily be carried to each of plumbers' [illegible]

PRICE, FIG. 9769

Brass cylinder 1 inch [illegible] inches each [illegible] $7 00

FIG. 9769.

GAS COMPANIES' AND PLUMBERS' DRIP PUMPS.

DESCRIPTION, FIG. 9770

These Drip Pumps are for extracting water from gas drips. They have brass cylinders, brass plunger valve and plunger rod glands etc. Suction is regularly fitted for [illegible] pipe unless otherwise ordered.

PRICES FIG. 9770.

No.	[illegible]	0	1
Brass [illegible] cylinder inches		5	8½
Stroke inch		9	8
Suction pipe [illegible] inches		¾	¾
Each		$12 00	$20 00

FIG. 9770

GAS FITTERS' PROVING PUMP.

FIG. 9771

PRICE, FIG. 9771

With spec[illegible] complete each $19 70

RUBBER ELASTIC FORCE CUP.

FIG. 9772

For instantly [illegible] and discharge [illegible] water [illegible] tube [illegible] any wash tubs [illegible] they become partially [illegible]

PRICES FIG. 9772

No. 1 [illegible] diameter [illegible]	$6 00
No. 2 [illegible] diameter [illegible]	9 00
No. 3 [illegible] diameter [illegible]	12 00

SERVICE CLEANER.

FIG. 9773

PRICE, FIG. 9773.

No. 30 [illegible] $24 00

SPEED INDICATORS.

FIG 4312 NO 104.

HIGH SPEED INDICATOR, NO. 104.

This indicator may be run at highest speed required without heating, and this on account of the frictionless bearing against which the inner end of the spindle revolves.

PRICES FIG 4312

In pasteboard box, each $5 00
In leatherette case, each 7 50
For 50 cents extra.

The indicator in pasteboard box will be sent unless otherwise ordered.

IMPROVED SPEED INDICATOR, NO. 106.

The graduations show every revolution up to 1,000, over which figures are read both right and left, as the shaft may run.

PRICES, FIG 4313.

In pasteboard box, each $5 50
In leatherette case, each 8 00

Sent in pasteboard box unless otherwise ordered.

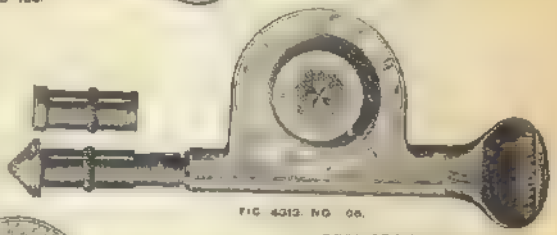


FIG 4313 NO 106.

FIG 4314 NO 107

REGISTERING SPEED INDICATOR, NO. 107.

[illegible] The small dial has fifty lines cut upon its face, each representing one hundredth part of one complete turn of the large dial.

PRICES, FIG 4314.

In pasteboard box, each $3 50
In leatherette case, each 5 00

Sent in pasteboard box unless otherwise ordered.

FIG. 4315.

NEW RUBBER TIPS FOR POINTED AND HOLLOW CENTERS.

For use with Speed Indicators, Figs. 4312 to 4314.

[illegible] spindle rubber tips for both pointed and hollow centers. [illegible] a stronger frictional contact between the shaft and the indicator.

HUSSEY SPEED INDICATORS.

DESCRIPTION, FIG. 4316

This instrument is designed for [illegible] and uniform speed of [illegible] eight-day Howard clock [illegible] dial nickel plated [illegible] the face of the clock. The [illegible] and speed hand [illegible] which [illegible] front of the speed [illegible] When [illegible] the outside circle of [illegible] per minute than it does [illegible] When [illegible] the speed [illegible] stop, of course the speed hand will stop, but the clock will continue to move at its constant rate.

[illegible] speed indicator it is only necessary to state the number of revolutions [illegible] rate [illegible] head may be used [illegible]

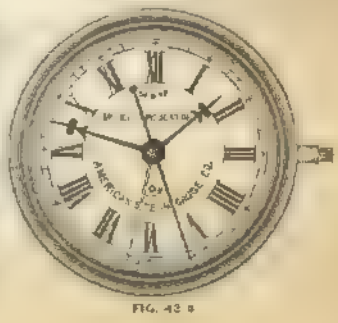


FIG. 4316

EMPIRE TACHOMETERS.

FIG 4317 FULL SIZE.

DESCRIPTION, FIG 4317

The instrument [illegible] and correct [illegible] indications [illegible] [illegible] [illegible]

STANDARD VERTICAL RADIATORS.

FOR STEAM.

SPECIFICATIONS F. G. 3619. ONE ROW OF TUBES.

No. of rows	1	1	1	1	1	1	1	1	1
Tubes in each row	6	8	10	12	14	16	18	20	22
Heating surface, square feet	6	8	10	12	14	16	18	20	22
Height, inches	25	25	25	25	25	25	25	25	25
Length, inches	15	19	23	27	31	35	39	43	47
Width, inches	6	6	6	6	6	6	6	6	6
Size of inlet for single pipe, inches	1	1	1	1	1	1	1	1	1
Size of inlet for double pipe, inches	¾	¾	¾	¾	¾	¾	¾	¾	¾
Size of outlet for double pipe, inches	¾	¾	¾	¾	¾	¾	¾	¾	¾

We furnish only the sizes above specified, single row. Prices on application. In ordering give full particulars as to shipping.

TWO ROWS OF TUBES.

No. of rows	2	2	2	2	2	2	2	2	2
Tubes in each row	6	8	10	12	14	16	18	20	22
Heating surface, square feet	8	12	17	21	25	29	33	37	41
Height, inches	34	34	34	34	34	34	34	34	34
Length, inches	15	19	23	27	31	35	39	43	47
Width, inches	6	6	6	6	6	6	6	6	6
Size of inlet for single pipe, inches	1	1	1	1	1	1	1	1	1
Size of inlet for double pipe, inches	¾	¾	¾	¾	¾	¾	¾	¾	¾
Size of outlet for double pipe, inches	¾	¾	¾	¾	¾	¾	¾	¾	¾
Length of nipple for single pipe, inches	4	4	4	4	4	4	4	4	4
Width of nipple for single pipe, inches	¾	¾	¾	¾	¾	¾	¾	¾	¾

Distance between centres of tubes, 2¼ inches. We furnish only the sizes above specified, two rows. Prices on application. In ordering give full particulars as to shipping. We can furnish these vertical radiators with three, four or six rows of tubes.

ONE ROW OF TUBES.

F. G. 3619.

CIRCULAR RADIATORS.

FIG. 3620.

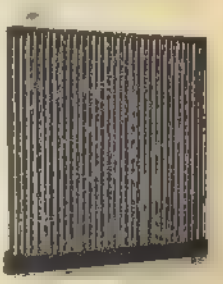
SPECIFICATIONS F. G. 3620.

No.	1	2	3	4	5
Number of rows	1	2	3	4	5
Heating surface, square feet	4	8	12	16	20
Height, inches	25	25	25	25	25
Outside diameter, inches	15	17	19	21	23
Size of inlet for single pipe, inches	1	1	1¼	1¼	1½
Size of inlet for double pipe, inches	¾	¾	¾	1	1
Size of outlet for double pipe, inches	¾	¾	¾	¾	¾

We furnish only the sizes above specified. Prices on application. Quotations will be given for radiators shipped with three nipples only. In ordering give full particulars as to shipping.

STAGGERED TUBE RADIATORS.

FOR INDIRECT HEATING



F. G. 3621.

SPECIFICATIONS F. G. 3621.

Tubes, each	6	8	10	12
Tubes, number of rows	12	16	18	20
Steam, inches	¾	1	1	1¼
Height, inches	25	25	25	25
Heating surface, square feet	6	8½	12	16
Air space, square inches	283	378	530	707
Length, overall, inches	20½	26½	32	38
Width, overall, inches	15½	15½	15½	15
Height, overall, inches	30	35	39	43
Tapping	1¼ x ¾	1½ x ¾	2 x ¾	2 x 1

These Radiators can be made with any length of nipple desired, which will vary with the number of sections. All are made with right hand threads on tops. They are made with screw right and left threads on 2½ x 2½ inch outlet at the top.

Prices on application.

PLAIN BOX COILS.

MADE OF 1 INCH PIPE.

FIG. 3622.

PRICES F. G. 3622 AND 3623.

Per linear foot.

Length, feet	5	7	8	9½	11
Width, inches	4	4	8	8	8
Height, inches	10	10	10	10	10
Each	50c	65c	80c	90c	$1.00
Per hundred	45c	60c	75c	85c	95c

Length, feet	5	7	8½	9	11½
Width, inches	4	4	8	8	8
Height, inches	10	10	10	10	10
Each	70c	90c	$1.10	$1.25	$1.50
Per hundred	65c	85c	$1.05	$1.20	$1.45

The above prices are based on coils made of wrought pipe and charcoal irons.

Prices on coils of other sizes, made of 1 inch pipe, 4 to 10 inches wide and 10, 14 and 18 inches high, will be quoted on application.

ORNAMENTAL COILS.

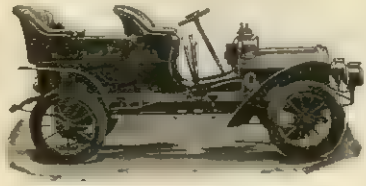
MADE OF 1 INCH PIPE

FIG. 3623.

Stevens-Duryea

Four-Cylinder, Twenty-Horsepower **$2,500 Touring Car**

WHAT concerns you is not the size of the engine nor the horsepower the maker claims for it. You are only interested in the **RESULTS**—hill-climbing—road speed—power in sand, etc.



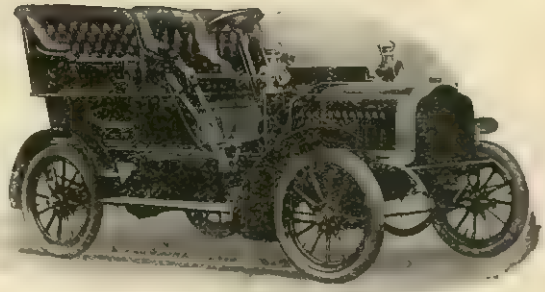
We have said a lot at various times about getting a greater proportion of the engine horsepower delivered to the rear wheels of the **Stevens-Duryea** than any other car. There never was anything easier to satisfy yourself about—a bit of sandy road—a stop watch—the **Stevens-Duryea's** time vs. the other car's time—the size of the **Stevens-Duryea** engine vs. the size of the other. TRY IT.

Send for Twentieth Century Hustler Booklet.

STEVENS-DURYEA CO.
700 MAIN STREET
CHICOPEE FALLS, MASS., U. S. A.
Member Association Licensed Automobile Manufacturers.

Compound

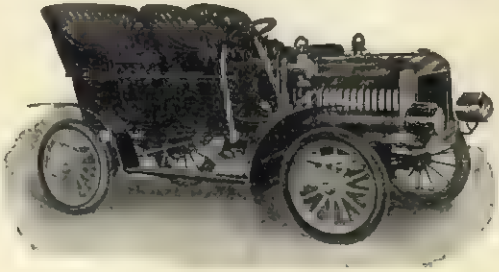
45 Miles on two gallons of gasolene, carrying five passengers in Automobile Club of America's Efficiency Contest, through rain and mud.



LIGHT TOURING CAR, $1400.

THE E. H. V. COMPANY, Middletown, Conn.

The GALE



Simple, Accessible, Reliable.

Looks right. Runs right. Is right.

Model E (like cut) $1250.00. Model F (with top) $1325.00.

THE WESTERN TOOL WORKS

GALESBURG, ILLS.

Removal

The Daimler Manufacturing Company, of Long Island City, N. Y., beg to announce that on and after May first they will show the 45 horse-power **AMERICAN MERCEDES** at their new show rooms at No. 1777 Broadway, New York City.

STEVENS' SINGLE SHOT RIFLES

Rifles Stevens' "Ideal" English Model, No. 044½

BARREL—Half octagon, standard weight for rim fire, 24 inches; for centre-fire, 26 inches. Full octagon, extra **$4.00**

FRAME—Drop forged and case-hardened, new action.

TRIGGER—Single. Double set trigger, extra .. **$12.00**

STOCK—Oiled walnut forearm and pistol grip or straight English shotgun butt.

AMMUNITION—.22 Long Rifle R.F.; .25 Stevens R.F., .25-20 Stevens C.F., .32 Long R.F.; .32-20 C.F. Special to order for .22 Short R.F., .22-7-45 R.F., .22-15-60 C.F.; .25-21 C.F., .25-25 C.F., .28-30-120 C.F., .32 "Ideal" C.F., etc., extra **$4.00**

SIGHTS—Rocky Mountain front and sporting rear.

WEIGHT—24-inch barrel for R.F. cartridges, 5¾ pounds; 26-inch barrel for C.F. cartridges, 6 pounds.

PRICE—Standard length of barrel **$24.00**
Extra lengths of barrel over standard, per inch **2.00**

Stevens' "Ideal," No. 44

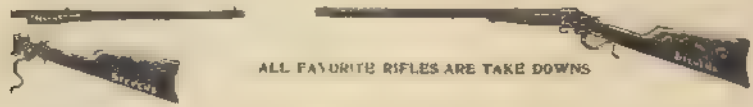
No. 44—Half octagon barrel, oiled walnut stock and forearm, rebounding, case hardened receiver, sporting rear and Rocky Mountain front sight. Made only in the following styles, to take these cartridges:—

.22 Long Rifle R.F., .25 Stevens R.F. and .32 Long R.F. Standard length of barrel for rim fire cartridges, 24 inches. Weight, 7 pounds.

.25-20 Stevens C.F., .32-20 C.F. Standard length of barrel for centre fire cartridges, 28 inches. Weight 7¼ pounds.

Price **$20.00**

Stevens' "Favorite" Rifles



Weight 4½ lbs., 22-in. barrel, .22, .25 and .32 calibres, rim fire.

No. 17, with open sights, each **$12.00**

" 18, With Vernier peep sights, open rear and Bead combination front sights, each **17.00**

" 19, with Lyman peep open rear and Lyman front sights, each **18.00**

STEVENS' RIFLES

Stevens' "Little Krag," No. 65

BARREL—Round, standard length, 20 inches.
FRAME—Blued steel.
TRIGGER—Sing
STOCK—Oiled walnut, forearm same, rubber butt plate.
AMMUNITION .22 Long Rifle R. F. Will also shoot C. B. caps, .22 Short, .22 Long. For accuracy we recommend .22 Long Rifle.
SIGHTS—Bead front. Rear peep. Weight, 3¾ pounds.

Price, ... **$7.50**

Stevens' Crack Shot

The "Crack Shot" has all the good features of any of the best rifles now on the market

Round, 20 inches, blued barrel, case-hardened frame, oiled walnut stock and fore arm, rubber butt plate. Chambered for .22 Long-rifle R. F. and .32 Short R. F. cartridges, has plain open front and rear sights. Weight, 4 pounds.

Price, ... **$6.50**

Stevens' Maynard Jr.

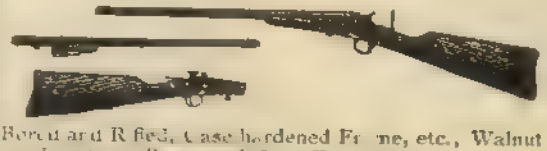
No. 15—18-in., half octagon barrel, walnut stock, blued finish, lever action, packed one in a box.

Price **$5.50**

Accurately bored and rifled for .22 Short R. F. Cartridges

New Remington No. 6 Take-Down Rifle

Specially designed to meet the demand for a light accurate Take Down, of standard make, at a low price.



Adapted to the following Rim Fire Cartridges: 22 short Black, 22 short Smokeless, 22 long Black, 22 long Rifle, C. B. Caps, C. B. Caps Smokeless, B. B. Caps and B. B. Caps Smokeless, 32 short 32 long Special Decarbonized Round Steel barrel, Tapered. Accurately Bored and Rifled, Case hardened Frame, etc., Walnut Stock and Forearm, New Design Open Front and Rear, and Tang Peep Sight 22 and 32 Rim Fire Calibre, 20-inch barrel, about 3½ to 4 lbs. **$8.50**

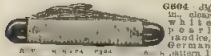
1904 Improved Eagle Flobert

The barrel of this rifle is made of steel, rifled for accurate shooting. It will use B. B. caps, .22 short or long cartridges. The breech lock mechanism is strong and simple, it has a positive extractor, and will not easily get out of order. The stock is of walnut, handsomely finished. It will become one of the greatest sellers that has ever been offered to the trade

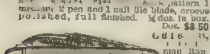
Price, each **$6.50**

See Terms page 3, and Discount sheet next back cover.

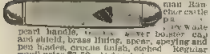
"NEVER DULL" KNIVES—Cont'd.



G604 ... clear white pearl handle, German pattern 1 ... Doz. $8.50



G615 ... nant Ram Phenomite pearl handle, ... saw blade, brass lining, nickel ... and pen blades, chrome finish, etched ... result price $1.50 ¼ doz. in box ... Doz. $10.50

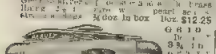


G605 ... pearl handle, ... German silver bolster cap, ... silver cap, bolster shield and ... polished ¼ doz. in box ... Doz. $12.50

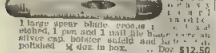
G610 ... 3¼ in. ... 1 pen and 1 ... silver cap, bolster shield and ... polished ¼ doz. in box ... Doz. $12.50

G620—3 in., solid sterling silver handle, artistic ... pattern, 2 blades, finest steel, full ... chrome finish, polished throughout, ... individual box ... Each $1.25

"Never Dull" Assortments.

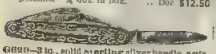


G1093—1 doz. assrd. pen and jackknives (no ... two alike), from our "Never Dull" line. Fine English steel, German silver bolster and ... shields, strong spring ... Password in silk ... cover ... Doz. $3.75



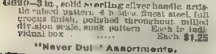
G1094, "Half and Half" Assortment—... brass lined, 6 assd. lines, 12 styles in leatherette ... No. G1093. Complete, $3.9

"NEVER DULL" AMERICAN POCKET TOOL KIT.



G201—Solid ... cocus handle jack ... knife, large ... spear blade, heavy ... brass lining, ... man silver ... Password ... also the following ... tools: reamer, file, saw chisel and screw driver. Best tool steel, nickel plated. Purse pouch to handle, hold firmly ... set in leather pocket case, ... (in lots of 1 doz. ... Each $4.50

Doz. $ 25



SPECIAL PREMIUM OFFER WITH $25.00 ORDER OF OUR FAMOUS "NEVER DULL" CUTLERY

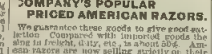
... selection of ... pocket ... and ... fork ... Will ... Each

No strings to this offer (cassolone without goods $2.50 each.

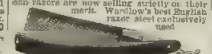
"Never Dull" cutlery needs no introduction to those purchasing it who have bought the line. It is a ... Each blade polished and is strictly guaranteed in every respect

ICELSIOR CUTLERY COMPANY'S POPULAR PRICED AMERICAN RAZORS.

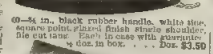
We guarantee these goods to give good satisfaction. Compared with imported goods the same in freight, duty, etc., is about 50%. American razors are now selling strictly on their merit. Wardlow's best English razor steel exclusively used



G—4 in. black rubber handle, white ... square point, plated finish, ... die cut ring. Each in case with ... ¼ doz. in box ... Doz. $3.50



G1—4-8 in. fancy black rubber handle, square point, double shoulder, die cut polished ... Each in case with guarantee. Each, 45c ... ¼ doz. lots $3.75 doz.!

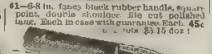


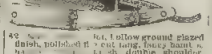
G2— ... in., full ... finish, polished ... cutting, fancy ... handle, double shoulder, ... Each 48c ... ¼ doz. lots, $5.50 doz.)

G3— ... ing, hollow ground ... double shoulder, smooth ... handle, German silver ... Each in case with guarantee ... Each, 62c ... ¼ doz. lots, $6.80 doz.)

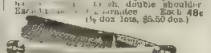
KARL ENGEL & SONS, WALD, GERMANY, CELEBRATED "KRONPRINZ" RAZORS.

Highest award, International Exhibitions, Paris and Vienna. Recognizing the demand for ... unsurpassed ground and ... unswerving ground and ... Engel, tempered and set by ... unconditional guarantee ... special prices for import orders

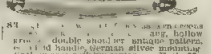




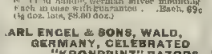
G12—Min. full concave, square points, file cut tang, polished and ... finish, ... handle, white ... Each in case ... ½ doz. in box ... Doz. $4.00



G14— ... point, ... ground, ... black rubber handle. Each in fancy ... tered case. (½ doz. lots, $7.25 ... doz.)..... Each, 85c



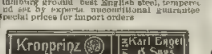
G15—⅝ in. blade, full concave, square point, ... double shoulder, file cut, polished tang, fancy ... finish veil, wood handle. Each in fancy case ... ½ doz. lots, $8.00 doz.) ... Each, 79c



G10—⅝ in. blade ... concave, oval back, half ... ground, ... finish, ... handle ... Each, 84c

G17—⅝ in. ... full concave, double ... square point, highly polished ... finish, genuine pure white ... Each in fancy case ... doz. lots $15.00 ea.) ... Each $1.35

RAZORS.



G77 Bee Brand" ⅝ in. double concave ring ... blade, selected English razor steel ... concave, double shoulder, etched with ... brand full polished, tang stamped with ... number and name, polished bark rubber ... handle, ivory ring. Guarantee with each. ... Each in leatherette case ..... Each, $1.00

G78—⅝ in. blade, other wise as G77. Each, $1.00

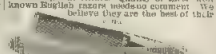
G90 — "Traveler's Friend." ⅝ in. hollow ground blade, finest English steel, square point, oval tang etched with name and number, polished fancy black rubber handle ... ivory division. Each in gilt lettered ... case ... Each, $1.00

JOSEPH ALLEN & SONS' CELEBRATED "NON-XLL" SHEFFIELD RAZORS.

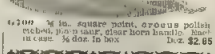
"Re-cellall" Works established 1838. A direct blend with this famous factory enables us to offer special ... values. Quality of these well known English ... needless comment. We believe they are the best of their ...

G702 ⅝ in. square point, ... polish ... razor, clear horn handle. ... in case ... ½ doz. in box ... Doz. $2.65

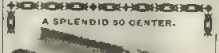
A SPLENDID 50 CENTER.



G710—⅝ in. square point ... hollow ground, ... finish. ... black rubber handle. ... ½ doz. in box ... Per Doz. $4.25



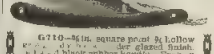
G720 ... full concaved ... double shoulder ... ½ doz. lots $5.25 doz.) ... Each, 72c



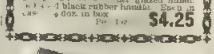
G730 ... concaved, ... ground ... ⅝ in. ... file cut tang ... ½ doz. lots $7.00 doz.) ... Each, 79c

WADE & BUTCHER RAZORS.

Too well known to need minute description

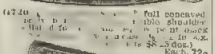


G60—Hollow point ... finish ... Each razor in sealed case ... Doz. $2.75



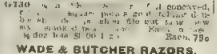
G50—⅝ in. blade, full concave, finish, hollow and square points, etched tang, pure white bone handle, quality needs no comment, each ... perfect, ... fancy finished. Each ... in patent wrapper and plain box, ½ doz. in ... Doz. $4.00

G21 ⅝ in. blade, hollow point, etched blade ... hollow ground, bright rubber handle. Each in case, ½ doz. in box, Doz. $4.00



G61— Boy ... ⅝ in. blade, square point, hollow ground, etched and finely polished blue, rubber handle..... Doz. $6.00

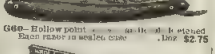
G62 ... ⅝ in. blade, polished and finished ... rubber handle, silver lettered ... Doz. $9.00



G65—⅝ in. hollow ground etched blade, polished tang, fancy white celluloid handle. Each in case ..... Doz. $10.00

G63—"Special Keen Shaver." ⅝ in. square point, full hollow ground, etched in gilt ... in fancy lettered case ... Each $2.50

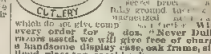
AMERICAN RAZOR.



G79—"Thistle" Brand. ⅝ in. hollow ground blade, best American razor steel, square points or ... shoulder, polished tang, antique ... handle. Each in plush lined ... leather case, spring cover, nickel ...

BUTLER'S "NEVER DULL" AMERICAN RAZORS.

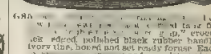
Finest production of the ... American ... manufacturer. Special Butler ... guarantee ... never ... fully ground ... which do not give ... satisfaction. With every order for ... doz. "Never Dull" ... we will give free of charge ... handsome display case, oak frame, silk ... glass top, easel back



G85 ... full ... ground ... ⅝ in. ... ground ... ivory ... Each ... $1.25

G86 ... full concave ... double file cut ... fancy pattern ... handle ... Each $1.35

G87 ... in., double concaved, polished, file cut ... rounded point, new pattern, polished ... handle. Exact copy of ... German silver mounting ... case ... lots, $15.00 doz.) Each $1.35

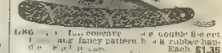


G88 ⅝ in. As G87 with new black finish ... hold handle, exact imitation of pearl ... horn, German silver mounting. Each in case, ½ doz. lots, $15.00 doz. Each $1.35

"BUTLER" RAZORS.

The very best razor possible to produce at this price. Strictly guaranteed.

G69—⅝ in. full hollow ground, ringtop blade, finest Sheffield razor steel, square point, file tang, full polished ... razor heavy black horn handle. Each in box ... Each $1.25



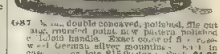
G70 ... brand, ⅝ full concave ... English carbon steel ... grinding, Sandstone ... all ... concaved, hand ... polished ... ivory ... in plush lined ... Each $1.75

G71; 4-8. As above ... Each $1.75

Baker's CELEBRATED "TREE" BRAND RAZORS.

Years of use have made them familiar to ... heads. Quality ... ...

G20—Black rubber handle, celluloid tip, full ... hollow ground blade, hard rubber tang, square point, double shoulder, crocus polish. Each in leather covered case, silk lined ... Each $1.40

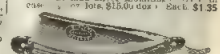


G101—"Red Injun" ⅝ in. blade, best Sheffield steel, full concave, hand ground, expert ... square point, double file cut tang ... polished, etched polished black rubber handle, ivory division. Each in gold lettered case ..... Each $1.75

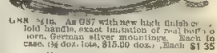
G100—As above, ⅝ in. blade ... $1.75

J. WOSTENHOLM & SONS, SHEFFIELD ENGLISH RAZORS.

The name will sell them



G105—⅝ in., hollow point, polished handle, etched, single shoulder, polished black rubber handles. In case, ½ doz. box. Dr. $4.25



G1110—⅝ in full ... ground blade, highly ... polished ... point, double ... shoulder black

RAZOR ASSORTMENTS.

G30—"Thistle" brand, [illegible] in three 5-8 in. [illegible] English steel blades, [illegible] double shoulder [illegible] bone round, square [illegible] polished black [illegible] Tested and guaranteed perfect [illegible] satisfactory. Fancy gilt lettered leather cases display roll white flannel [illegible] patent pockets. ½ doz. in roll. Complete. $3.75

G39, Triple-[illegible] brand [illegible] pure [illegible] one [illegible] [illegible] [illegible]

AUTOMOBILE HEADQUARTERS

NEW SOUTHERN HOTEL

Michigan Boulevard and Thirteenth Street, CHICAGO

200 ROOMS 100 WITH PRIVATE BATH

2 Blocks from Coliseum

Reserve your rooms now. **ALEX. DRYBURGH, Manager**

When in Chicago stop at the STRATFORD HOTEL

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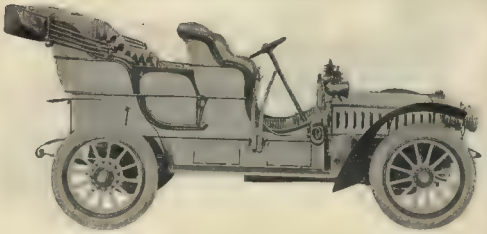
Michigan and Jackson Blvds., Chicago



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EXCLUSIVE

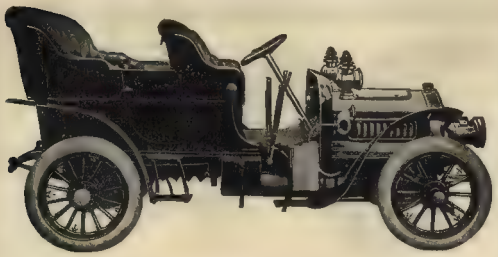
AUSTIN

FEATURES

New complete DOUBLE IGNITION system, improved (patented) sliding gear transmission (selective type), FOUR FORWARD SPEEDS with new (patented) method of operation, new (patented) SPRING CONTROLLER absorbing recoil. A BEAUTIFUL and exceptionally well built car, STRONG in every part. Write for full particulars.

AUSTIN AUTOMOBILE CO.

GRAND RAPIDS, MICH.



NOT a racing auto— but it has great speed.

NOT an auto for show alone — but no machine made has greater beauty or style.

IT IS an auto for motoring; an ideal all around touring car with a perfect ignition system, combining dynamo and storage batteries; a positive pressure oiler that assures regular lubrication; a rear axle device that relieves the driving axle of the machine's weight.

Lightness and speed, strength, comfort and style, and back of these the name that stands for reliability—

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THE 4-CYLINDER GASOLINE CAR FOR 1906

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Four years experience in the Automobile supply trade has taught us a good deal about the business. We know that quality counts first and we want a chance to show you that "Sunlyte" Lamps and Generators and Motor Goods Mfg. Co. sundries will stand the hardest kind of usage.

THE PRICES ARE RIGHT.

These goods are made exclusively for ourselves by an old established brass works and embody our ideas. We have made the selling prices low and solicit the business of jobbers and manufacturers.

FRENCH STYLE, LIST $15.00

It's the Parabola Style—the most popular Lamp in Paris—made in New York and sold at half the import price. Height 12 in., 10 in. front, weight 10 lbs., fitted with Bausch & Lomb condenser and silvered reflectors. The focus is accurate and it throws a powerful light.

SEARCH LIGHT, LIST $10.00

Our 7 in. Searchlight, being fitted with H. & L. Manglin reflector, correctly focused, gives a stronger light than 8 or 9 in. lamps with imitation reflectors. It is made of brass, the front door and rear cover of heavy copper. Supplied with swivel or pilot house attachment at a small extra cost.

TRITONE EXHAUST WHISTLE

Licensed under patent No. 783,748

$12.00

This Whistle is made of heavy gauge brass tubing highly polished, in a thoroughly efficient manner. The Cut Out Valve is constructed on an absolutely mechanical principle allowing valve to be opened and closed gradually giving as loud or low a blast of whistle as may be required. Ready for immediate delivery.

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THE NEW

ARIEL

"THIRTY"

Is as fast on hills as most cars are on the level.

In fact our claim of **more power** per cylinder volume **than any other form of cylinder** is being substantiated by performance in open competition.

Every valve can be removed in five minutes, and a piston taken out in half an hour, while in an hour the entire power equipment of motor and transmission can be removed for inspection.

The handsome and distinctive lines of the new Ariel, together with its great power and accessibility, make it more than ever before the best $2500 value offered.

Agents are rapidly taking up our output, and if you want to talk apply at once. Our contracts are liberal in the extreme.

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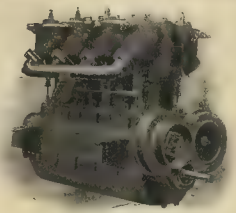

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Pneu l'Electric Tires, French Ignition Wire, Coils, Lamps, Enunciators, Limousine Lights, Tools, Etc.

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Motors for Automobiles and Boats

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Complete Chassis, Gear Cases, Steering Posts, Differentials, Ball Bearings and Automobile Parts

See our exhibit at the **New York Show,** Room F, Gallery. 69th Regiment Armory. Stock at our salesrooms, 1591 Broadway, N. Y.

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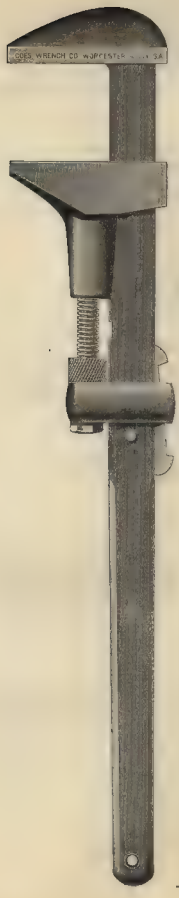


IF you run a Garage or own an Auto, you need these wrenches.

The Key Model. (Left cut.)

28in. and 36 in. long, largest nut wrench made. Strong, unbreakable, handy and cheap.

Will replace a dozen forged special wrenches.

The ★ 91 Steel Handle (Right cut)

in seven sizes—from 6 in. to 21 in. Heat, damp, and wear proof. Steel handle. 30 per cent stronger, size for size, than any imitation or substitute.

Every wrench fully

WARRANTED.

No advance in price.

Coes Wrench Co.

Worcester, Mass.,

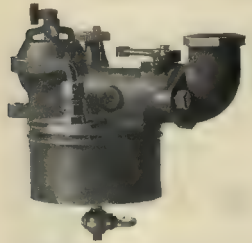
Or Your Dealer.

Ask for "Coes Genuine."

CIRCULARS

The "Breeze" 1906 Carburetor

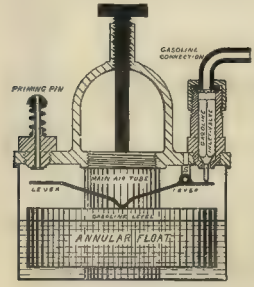
The accompanying cut illustrates in detail the 1906 model of the "Breeze" carburetor, which is made by the Breeze Motor Mfg. Co. of 33 Court street, Newark, N. J. The Breeze automatic carburetor is a high grade product, simple to adjust and has few work-



Exterior view "Breeze" 1906 Carburetor.

ing parts. The top is a casting, the base is of spun brass which is both light and clean. It is not necessary to prime these carburetors to start an engine if the gasoline is of good grade.

The main air supply enters at the bottom and is drawn past the spray nozzle, the orifice of which is controlled by a peculiarly shaped needle valve which converts the jet into a fine spray. The diameter of the air pipe is

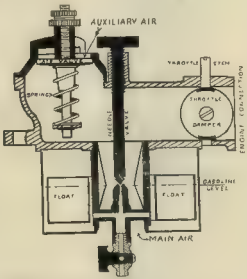


Sectional View "Breeze" 1906 Carburetor showing the float and the gasoline passage.

constricted around the spray nozzle to increase the air velocity at this point. The auxiliary air valve opens as more air is required at higher engine speeds, it is made of a light and strong aluminum alloy and provided with a simple means for adjustment.

The throttle is of the ordinary butterfly type with a stop which can be placed so that the throttle can be operated from any direction. The throttle can be set to open or close in either direction. Carburetors are made with a flange and flanged pipe connections to match are furnished with either vertical or horizontal outlet. The float is of spun brass and operates the gasoline inlet valve through a lever hinged on the top casting.

The lever always rests on the float, and when the gasoline level drops, the float and long arm of the lever fall with it, lifting short arm of the lever which opens the inlet valve. As the gasoline level rises so do the float and lever till the inlet valve is permitted to fall by its own weight and shut off the supply. The inlet valve is of a hard



Sectional View "Breeze" 1906 Carburetor showing the air passage.

alloy and the seat improves with use. It can be removed for cleaning out dirt when the gasoline pipe is disconnected. A small strainer is fitted above it. This float feed mechanism is not affected by rough roads because any upward vibration which might open the valve would throw the gasoline in the same direction, downward jolts close the valve all the tighter. The lever extends to the opposite side of the carburetor and can be depressed by the priming pin if necessary for starting. The position of priming pin and gasoline inlet are interchangeable and can be changed to either side in a few minutes without deranging the gasoline level. The needle valve adjustment is on the top of the carburetor and the large valve head is indexed.

The base is screwed into the top casting and can be unscrewed by hand without the use of tools. This makes it easy to clean. The arrangement of gasoline passages is such that dirt or water to a considerable amount may be present without interfering with the operation of the carburetor. A pet cock is furnished and there is a boss cast on to the top casting to which a brace can be attached.

Detroit to New York in 48 Hours Without an Adjustment

of any kind except two Springs broken by accident

This 22 H. P. Model F, $1850, Pungs-Finch Car, was driven from Detroit to New York in 48 hours running time, without a single adjustment or REPAIR, except springs.

State of Michigan } S.S.
County of Wayne }

Edward B. Finch and Harry F. George, both of Detroit, in said county, being severally, duly sworn, each for himself, says that they together, did in October, 1905 - drive a 22 H. P. Model F., Pungs-Finch regular stock Touring Car, from Detroit to New York, Odometer register of 660 miles, in 48 hrs.. running time, making absolutely no repairs or adjustments on the way, excepting replacing two springs, broken through accident, and tire repairs.

Subscribed and sworn to before me this 7th day of November, A.D. 1905. } Edward B. Finch

Dwight C. Redfordh, Harry F. George

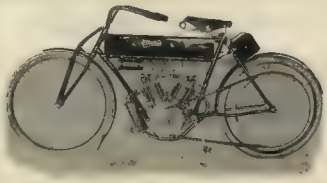
Notary Public, Wayne CO., Mich.

My commission expires Jany. 6, 1907

Our 1906 LINE IS ..RIGHT..

Pungs-Finch Auto Co.

DETROIT, MICHIGAN



The Curtiss Silent Running Motorcycle

2½ H P. Single Cylinder, **$200.00**

5 H. P. Double Cylinder, **$275.00**

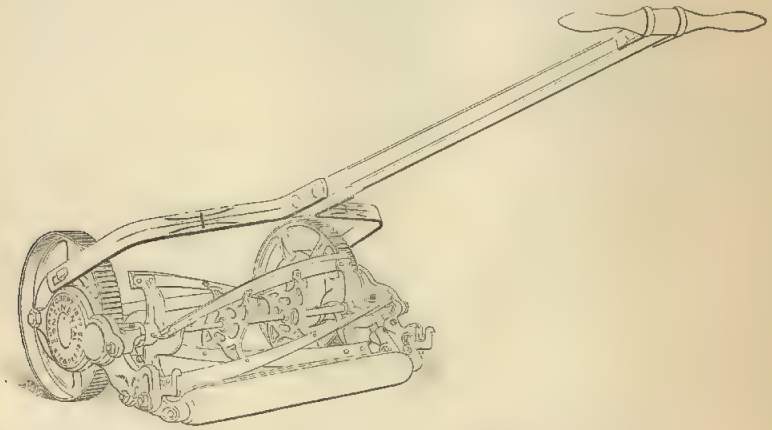
For 1906 all good features retained, others added. Positive, noiseless and durable transmission. Long wheel base. 150 miles fuel capacity. Roller bearings. Write for agency proposition.

G. H. CURTISS MFG. CO., Hammondsport, N. Y.

LAWN MOWERS.

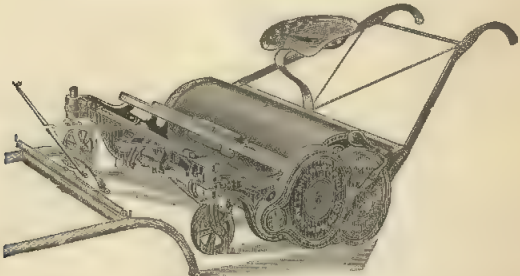
THE "CONTINENTAL" LAWN MOWER.

Double train of gears. Four cutting knives Easy running. High wheel, 9½ inch; 6½ inch cylinder.



Cu.. .nches	15	17	19	21
Each	**$25.00**	**28.00**	**31.00**	**34.00**

THE "EAGLE" PHILADELPHIA HORSE MOWER.



30, 35 and 40 inch. Five blades.

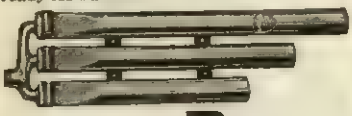
Made with added weight of iron for strength, increased diameter of cylinder for draft; and large shafting and journals for durability. Patent adjustable boxes for taking up the wear of journals; wrought iron front and back girths, making the mower frame solid Cutting cylinder stationary. Bed knife adjustable to the cylinder Cylinder blades are riveted to the spiders. With seat and shafts and draft pole and side draft attachment.

No reduction is made for seat and shafts for the mower will perform better work with them, than without.

30 inch.. .. .. .

The GABRIEL HORN

needs no lengthy description.
It is known everywhere on account of its agreeable tone and the fact that it is always ready for business.



The
FOSTER
Shock Brake

is the most perfect device known for eliminating the shock and bump occasioned by running your automobile over rough spots in the road.

By the saving in springs and the extra wear it gives to your machine, it pays for itself almost as soon as applied.

Write for circular and prices.

Gabriel Horn Mfg. Co.
977 Hamilton St. Cleveland, Ohio

TRADE MARK NON-FLUID OILS REGISTERED IN UNITED STATES PATENT OFFICE

We're Driving Two Winning Numbers—

K-000 and K-00 SPECIAL

These are Non Fluid Oils mostly used for motor car lubrication.

They have won year after year in the race for business—won from older competitors, both greases and fluid oils. Non Fluid Oils have won on their merits. They are better lubricants than oils or greases, and more economical.

Do you handle the genuine Non Fluid Oils?

If not, yon can't begin too soon for the good of your customers.

Samples Free

N. Y. & N. J. Lubricating Company
Dept. D. 14-16 Church St., New York City

THE GEMMER
Adjustable STEERING GEAR

A single adjustment takes up wear on all bearings and all lost motion of the wheel. Quadrant stationary, irreversible, oil-tight, compact, strong, safe.

Always easy to operate. High-class construction and finish. No dangerous sticking points after adjusting for wear.

Will accept no contracts we cannot positively fulfill.

WRITE FOR PRICES

Pat. Applied For.

GEMMER ENGINE CO., - **Wabash, Ind.**

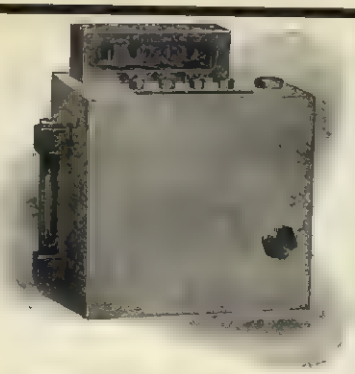
SELLING AGENTS: THE BRANDENBURG CO., 85 Lake St., Chicago. 102 Reade St., N. Y. City.

THE BADGE OF PERFECTION

In More Punctures, Rim Cutting, Coming Off, or Explosions.

FAWKES AIRLESS CLINCHER MOTOR **TIRE**

—the only safe tire—ends them all. Not a solid tire yet lasts longer—not a pneumatic but rides as easy. Thousands in use and demand increasing enormously. *Try a set TEN DAYS FREE.* Write for free Fawkes booklet on "Tire Troubles" containing scores of convincing testimonials. Milwaukee Rubber Works Co.
97 MacWilliam Ave. Cudahy, Wis.



WHAT'S THE USE

of trying to get along with an inferior oiler when you can get the

HANCOCK VALVELESS

They are the most reliable, economical, simple and adaptable, and force the required amount to delivery point.

The sight feed has no packing or liquids. We Guarantee to handle through a sight feed any oil that will flow together.

Write for our circular Important Facts

Dept H Hancock Mfg. Co. 144 E. Erie St., Chicago

—THE—

Lipman Electric Speed Indicator

PATENTED

is absolutely right at all times. There is nothing about it that can get out of order. The only instrument without flexible shaft, springs, weights, or friction devices. Made in sizes from 0 to 40 and 0 to 80 miles. The indicating hand is perfectly steady on the roughest of roads. Scale is 6½ inches long. Polished case 8¼ inches in diameter. Silver Dial with raised Black Figures.

Price with Odometer and fixtures $35.00
Price without Odometer . . 25.00

THE LIPMAN MFG. CO.
631 GRAND AVE. BELOIT, WIS.

The Buffalo Pressure Feed Cylinder Oiler

Fig. 50

Patent applied for

SHERWOOD MFG. CO., BUFFALO, N. Y.
Write for prices

No other oil approaches

"PANHARD"

in quality, reputation or sales.
BEST FOR AUTOMOBILES AND MOTOR BOATS

GEO. A. HAWS.
Manufacturer,
73 Pine Street, New York

nises; pressed steel frames, one piece pressed steel dashes, 4 in. deep, brass mouldings for steps, tool and battery boxes, gasoline gauge, which will show the height of the gasoline in the dark as well as in daylight, and other specialties in sheet metals.

The Hendee Mfg. Co.'s New Factory.

The Hendee Mfg. Co., Springfield, Mass., manufacturers of the well known Indian motor cycle, recently took possession of a brick building 150 feet by 50 feet, and four stories in height. This new factory is moderately equipped and will be used exclusively for the manufacture of Indian motor cycles.

The ground floor is used for the motor cycle and frame building, finishing department, tank, nickeling and brasing departments, blacksmith shop, receiving and shipping room, and the metal department for the tri-car seats and vans. Second floor is occupied by the offices, machinery department and tool room. The carburetor, wheel trueing, repair, stock, assembling and testing out departments are on the third floor. The fourth floor is used as an enameling and upholstering department for tri-car seats.

The Miller Solid Rubber Bicycle Tire

Chas. E. Miller, 97-101 Reade street, New York City, has recently brought out a solid rubber bicycle tire having a new and important feature in the method of fastening to the rim. In addition to the cement a ⅛ in. steel wire is inserted through the rubber and

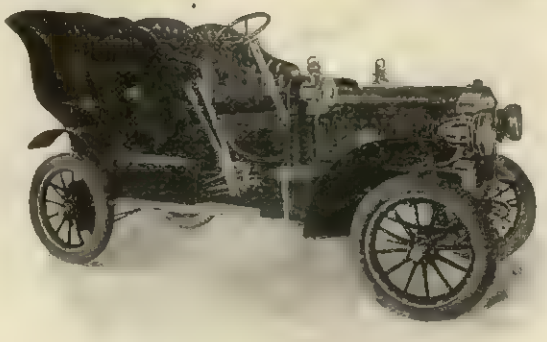
The Miller Solid Rubber Bicycle Tires.

wrapped around the felloe. The ends are securely connected by means of a brass turnbuckle. This style tire is durable and, of course, puncture-proof. It cannot come loose from the rim and is claimed to be nearly as resilient as a pneumatic tire.

New Indian Motor Cycle Factory.

THE LAMBERT

FRICTION DRIVE **FRICTION DRIVE**



Model 8. Price, $3000

Our Cars are Guaranteed for One Year

We Will Give You Prompt Delivery

Model B Truck. Price, $1500

Write for catalog describing our line of cars. Prices from $900 to $3000. We can make quick shipment of our Model 5—a $1200 machine.

THE BUCKEYE MANUFACTURING CO., Anderson, Ind.

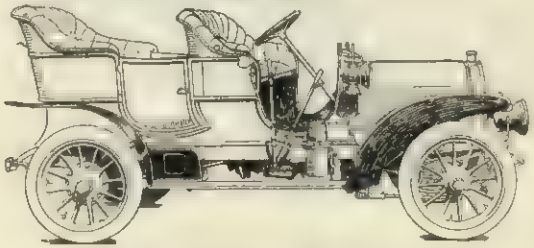
POPE Hartford AUTOMOBILES

1907
Pope-Hartford, Model L

The product of our famous Hartford factories represents the cumulative experience of twenty-nine years in making and marketing mechanical vehicles. The Pope-Hartford has won in all kinds of events and tests this year yet the 1907 Pope-Hartford, Model L is better in every detail. Don't order until you see this car. Send for complete information.

SPECIFICATIONS

MOTOR: Four cylinder; vertical, water cooled; all gears encased—valves all mechanically operated and interchangeable—25-30 h. p. Nickel steel crank shaft. Carburetor special design, very flexible. Jump spark ignition. Provision for magneto.
CLUTCH: Inverted cone type of large diameter.
TRANSMISSION: Sliding gear type with three speeds ahead and reverse.
DRIVE: Through a propeller shaft, pinion and bevel gear to the rear axle.
LUBRICATION: By a special oiler located under the hood, driven by belt from the cam shaft, with sight feeds on the dash.
FRONT AXLE: Solid forging made of special steel of the I-beam type.
REAR AXLE: Of solid steel running on large ball bearings in tubular sleeve.
STEERING: Strictly irreversible. Worm and sector type.
BRAKES: Two sets operated by foot pedals and side lever.
CONTROL: Ignition and throttle levers on top of steering wheel but not revolving with it. Gears changed by one hand lever.
FRAME: Armored, similar to our Model F frame.
BODY: Entirely new design, distinct and elegant. Double side entrance. Roomy tonneau with large doors.
HOOD: Improved design. Front guards overlapped and connected with the frame.
WHEEL BASE: Increased to 102". Tread 56".
WHEELS: 32 x 4" front and rear, running on large ball bearings.
EQUIPMENT: Full set of lamps, horn, tools and floor mats.



PRICE, FULLY EQUIPPED, $2750
(Extension Top $150 Extra)

POPE MANUFACTURING CO.
HARTFORD, CONN.

New York: 1733 Broadway, Boston: 223 Columbus Ave, Washington, D. C.: 819 14th St., N. W.
Members Association Licensed Automobile Manufacturers

The Lea
"Speedistimeter"

(Speed-, distance-, time-measure)

Tells what you want to know right on the spot.

The most handy, complete and useful attachment ever invented for a motor car.

Indicates accurately how fast you are going, how far you go, and how long it takes—all right before your eyes, without budging an inch.

Fastens to the dashboard. Figures are easily read from the seat.

Equipped with an eight-day Chelsea "auto" clock; has a scientifically accurate speed-indicating scale; and total mileage and trip odometers, all combined in one compact instrument.

Attachment to fit any automobile.

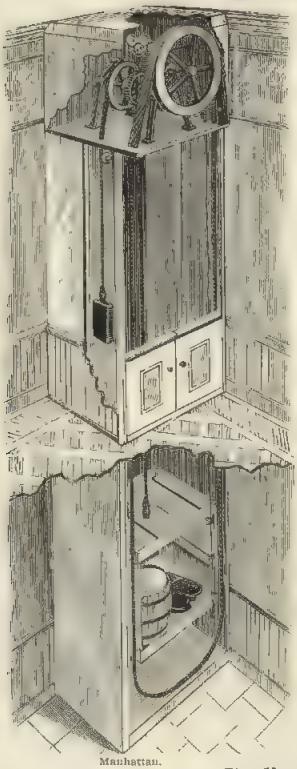
Look for the Lea "Speedistimeter" at the Madison Square Garden Automobile Show.

Write anyway for our booklet E and proposition to agents.

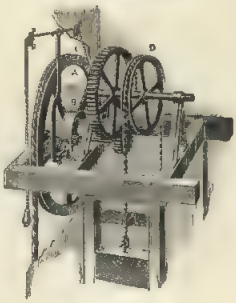
William S. Jones Sole Selling Agent for Motor Car Specialty Co. Trenton, N. J.

112 North Broad St., Philadelphia

ELEVATORS.



Manhattan.



Humphrey.

The Manhattan.

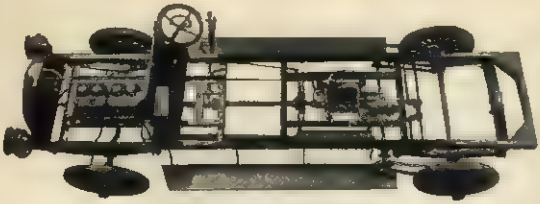
This fixture has a capacity of **200** pounds. The shafts run on babbit metal bearings; they are frictionless and noiseless, are handsomely bronzed, are perfectly made and warranted in all particulars. Use **3-8** inch cable for lifting and **5-8** inch manila rope for hand rope. These fixtures should not be used in well-holes or openings larger than **36** inches square. Fixtures are adjusted to a **1¼** inch shelf, ready to place over well-hole.

Manhattan Fixtures.....Per Set $45 00
New York. Capacity **75** Pounds, for Well Holes not larger than **24** Inches square. Fixtures.....Per Set 20 00
Humphrey No. **1.** Capacity **500** Pounds, for Well Holes not over **4** Feet square, Diameter of Wheel **36** Inches. Fixtures.....Per Set 70 00
Humphrey No. **2.** Capacity **750** Pounds, for Well Holes not over **5** Feet square, Fixtures.....Per Set 110 00

Price does not include Rope, Weight or Cage.

The "MILLER"

THE BEST BUILT COMMERCIAL CAR IN AMERICA



Our 45 H. P 4 Cylinder Chassis.

This Chassis is our regular stock Model G, 4 cylinder $4\frac{15}{16} \times 5$ which we equip with any style of body for freight or passenger.

We also build to order cars of from 2 to 10 tons capacity, also Hotel Busses, either Gasoline or Electric.

Our 45 H. P. 20 Passenger Sightseer.

MILLER GARAGE CO., Inc., Bridgeport, Conn., U. S. A.

This Iroquois Stage, 45 horse-power-15 passengers-is equipped with searchlight and speedometer. Price $5500. One stage used for demonstrating $4500.

Prices f.o.b. Buffalo, N.Y.

Iroquois Stage

Carries fifteen people as safely and comfortably as an ordinary motor-car carries two passengers.

It is not only strong and simple in construction, but every part is designed especially for the kind of work and the amount of work a stage is used for—not modeled on the plan of a small motor-car.

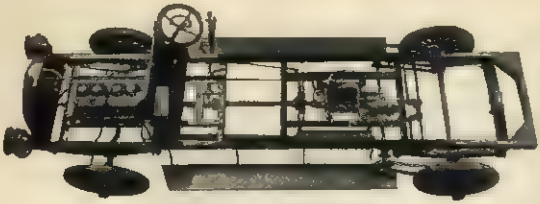
The engine will do all that is ever expected of a mammoth motor-vehicle—considerably more than is actually necessary.

The Barber Asphalt Company,

Land Title Building, Philadelphia.

The "MILLER"

THE BEST BUILT COMMERCIAL CAR IN AMERICA



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It is not only strong and simple in construction, but every part is designed especially for the kind of work and the amount of work a stage is used for—not modeled on the plan of a small motor-car.

The engine will do all that is ever expected of a mammoth motor-vehicle—considerably more than is actually necessary.

The Barber Asphalt Company,

Land Title Building, Philadelphia.

The Mosler Spit Fire Spark Plugs

Actually "SPIT FIRE" where others spark only

ENERGETIC IGNITION GREATER POWER

And stand more **SOOT, OIL** and **WATER** than any other Plug

Base acts as Condenser of Electricity

Economizes Current Facilitates Sparking

Forms Compression Chamber Makes Plugs Spit Fire

Protects Porcelain and Sparking Points

A TRIAL IS CONCLUSIVE

Standard size, **$1.50** postpaid

With patented protector, $2.00

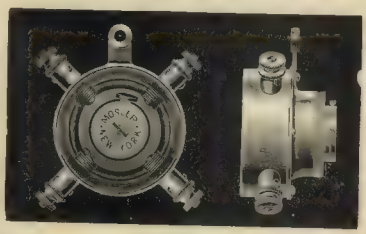
Made to fit any engine, any thread

Write now for 1906 Illustrated Catalogue of **Mosler Ignition Outfits**

Special Discount to Manufacturers

The Mosler Timers and Distributers

Run in oil, in either direction. Not affected by engine speed. Self adjusting. Multiple cylinders set as easy as one. Self contained.



Timer and Distributer

Ball Snap Timer

A. R. MOSLER & CO.. 1679 Broadway, New York

We hope to see you at the Madison Square Garden Automobile Show, Space 202, January 13th to 20th, inclusive.

The New Departure

Take a good look at it

Take a good look at it

This is the **New Departure Coaster Brake.**

This is the Hub that made the name **"New Departure" famous.**

This is the Hub that made the cycle dealer prosperous.

This is the Hub that gave cycling a new lease on life.

This is the Hub that changed a grind into a glide.

This is the Hub that changed back-pedalling into one long, delightful coast.

This is the Hub that stands for **Safety, Pleasure,** and **Profits.**

Do you handle this Hub? if not, write us for particulars.

We can aid you. We can increase your business for the season of 1906.

Manufactured by

The NEW DEPARTURE MFG. CO.

BRISTOL, CONN., U. S. A.

Selling Agents
JOHN H. GRAHAM & CO., New York City

THE NEW

FRENCH SIREN HORNS

$25 TO $50

OTHER NEW THINGS INCLUDE

THE AUTOLOG
speedmeter and odometer combination.

THE AUTO TOOL CHEST
complete with over 40 necessary auto tools.

AUTOMOBILE CLOCK
3 new designs selling at **$2.50, $5.00** and **$7.50.**

THE H@M AUTOMATIC BALL SPARK PLUG

AUTOMOBILE SUPPLIES
of every description.

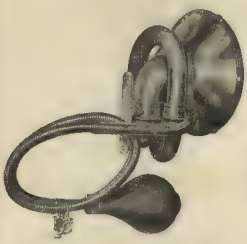
Money makers for every dealer and jobber.

See us at the Automobile Shows, Madison Square Garden, Space No. 138, also at the Armory Show in Room K.

E. J. WILLIS CO.

No. 8 Park Place **New York**

WRITE FOR OUR NEW HORN CATALOG



"MONSTRE"—The horn with the voice of a thousand bull-frogs. A beautiful car fixture and a rapid seller.
Price, $11.00

"VOLIER DRAGON"—The king of auto horns and the most widely copied horn in the world. Special trade prices in quantities.

No. 510	Dia. of Bell 6½"	Each	$ 9.00
No. 511	" " " 7"	"	10.00
No. 512	" " " 8"	"	12.75

ROYAL DE LUXE
"ALPHA" TYPE
SEARCHLIGHTS

Two sizes of this beautiful lamp, which is only one of the many styles in the complete Royal De Luxe line. Standard size, $15.00, large size, $21.00. Scientifically focused and thoroughly well made. A complete catalog of the splendid Royal De Luxeline sent on request.

The **New Royal De Luxe Grate Generator** is a new type which beats anything else we have seen for steady gas generating, economy and easy cleaning.
Price, $12.00

A SENSATIONAL NEW CLOCK will be shown for the first time at our Madison Square Garden exhibit. Something that will interest owners, dealers and jobbers. Imperial 8 Day Clocks, Regal Offset Clocks, Regal Standards and a New Bull's Eye, constitute an unequalled clock selection opportunity.

THE POST & LESTER CO., HARTFORD, CONN.

Surrey, Type One,
$1,200.00
Cape Top, $100 Extra.

The Rambler

requires 40 to 50% less gasoline than other cars

110 miles, over three mountain grades, from Los Angeles to Santa Barbara, Calif., on **7 1-2 gallons of gasoline,** is the Rambler record. The three other cars with perfect scores used 9½, 10½ and 12 gallons respectively.

A practical demonstration at any Rambler agency of Rambler ease of control, simplicity and reliability of mechanism, slight cost of fuel and maintenance, will prove to you that the Rambler is the car for you to buy.

Surrey, Type One, illustrated above, complete with lamps, horn, tools, etc., $1,200.00. Cape top $100.00 extra. Write for catalogue illustrating and describing six different models from $650.00 to $3,000.00.

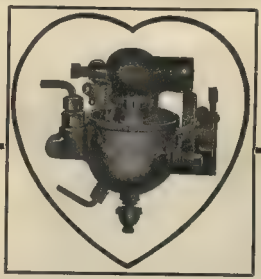
Thos. B. Jeffery & Co.

Main Office and Factory, Kenosha, Wis., U. S. A.

Branches:

Boston, 145 Columbus Ave.; Chicago, 302-304 Wabash Ave.;
Philadelphia, 242 N. Broad St.; New York Agency,
134 W. 38th St.; Milwaukee, 457-459 Broadway.
Agencies in other leading cities.

THE HEART OF THE AUTOMOBILE



The Schebler Carbureter

STANDARD OF THE WORLD

¶ 1,094 3-16 miles in twenty-four hours continuous running on a circular track; 1,000 miles in 21:58:00 4-5 continuous running on a circular track, breaking all world's records by 1:55:19 1-5.

¶ This is the world's record travels of a National car fitted with a SCHEBLER carbureter at the Indianapolis Fair Ground Tracks, Nov. 16th and 17th. Hundreds of miles were reeled off with scarcely a variation of a second in the time of each.

¶ Is it any wonder that eighty-three of the largest marine and automobile engine builders in the United States and Canada are equipping their motors with the SCHEBLER?

¶ A carbureter that gives a perfect mixture at all engine speeds regardless of weather conditions is truly "The Heart of the Automobile."

WHEELER & SCHEBLER, Manufacturers Indianapolis, Ind., U. S. A.

P. J. DASEY, 431 Wabash Ave., Chicago, Ill., Factory Representative

AGENCIES IN ALL THE PRINCIPAL CITIES OF THE WORLD

E. J. EDMOND, 44th St. and 6th Ave., New York City
EXCELSIOR SUPPLY CO., Chicago, Ill.
AUTOMOBILE SUPPLY CO., Chicago, Ill.
BECKLEY-KALSTON CO., Chicago, Ill.
E. B. BELCHER, 26 Green St., Malden, Mass.
JOS. BRASSARD, Central Falls, R. I.
ELLSWORTH FOUNDRY AND MACHINE SHOP, Ellsworth, Maine
NATIONAL ELEC. SUPPLY CO., Washington, D. C.
SMITH ELEC. ENGINEERING CO., Watertown, N. Y.
THE WALLACE BROS. CO., Norfolk, Va.
NORTH PHILADELPHIA AUTO STATION, No 3425 North Broad Street, Philadelphia, Pa.
F. C. BOWLUS, 323 Baronne St., New Orleans, La.
CONSOLIDATED SUPPLY CO., Denver, Colorado
CHANSLOR & LYON MOTOR SUPPLY CO., 503 Golden Gate Ave., San Francisco Cal.
LOS ANGELES AUTO CO., Los Angeles, Cal.
McCULLOCK & BOSWELL, Winnipeg, Manitoba
WILSON & COMPANY, Ottawa, Ontario, Can.
CANADA CYCLE & MOTOR CO., Toronto Junction, Can.
SHUMAN CARRIAGE CO., Honolulu, T. H.
TURNBULL & JONES, Dunedin, N. Z.
GEO. NEILL & CO., 38 Fenchurch St., London, England

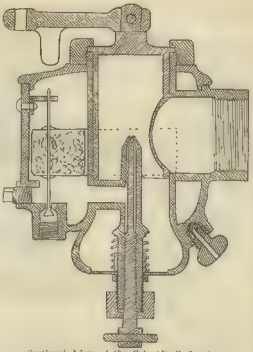
The gasoline connection furnished is a union with a short ¼ in. diameter tube for soldering or a standard ⅛ in. or ¼ in. pipe fitting as desired. The gasoline inlet valve and guide, the auxiliary air valve mechanism or the entire base of the carburetor can be detached for inspection, adjustment or cleaning without removing the carburetor. This carburetor is not easily accessible. Prices are: $10 for the ¾-in. pipe size; $15 for the 1-in. or 1¼-in. size; $25 for the 2-in. size, and $60 for the 3-in. size.

The Schmidt Carburetor.

The Minnesota Boat and Power Works, Stillwater, Minn., manufacture the Schmidt carburetor, which is constructed entirely of brass, nickel and silver and contains no parts that will corrode or rust. The float is made of heavily shellacked cork. Gasoline supply and regulation radiate from center of carburetor and thereby prevents the mixture richness from being affected by the swaying of machine in rounding sharp corners; or, in marine service, by the rocking or tilting of the boat.

Practically all the attention required is the adjusting of the needle valve.

When the motor is running at its minimum speed the air is drawn through an opening of fixed dimensions. As the speed is increased the suction requiring more air lifts the suction valve and by increased suction admits a larger proportion of gasoline. If the valve is closed the suction is decreased thereby decreasing the supply of gasoline. When a



Sectional View of the Schmidt Carburetor.

charge is throttled in this carburetor it is a complete charge, and not all air, or all gasoline, and no matter if the charge is large or small it is always of uniform richness, and on this depends the flexibility of an engine.

Exterior View of the Schmidt Carburetor

PATENTED

FINISHED WOOD WHEEL

Why be Satisfied With the Old Style?

"The Schwarz Wheel"

is scientifically correct and practically perfect. It is the strongest artillery wheel in the world. There is but one thing required to convince you that the **Schwarz Wheel** is superior to any other kind on the market, and that is investigation. For mutually profitable reasons we hope that you will either get the opinion of those who have used the **Schwarz Wheel** or make a test for yourself.

THE CONSTRUCTION OF THIS WHEEL INSURES ITS BEING PERFECTLY TRUE

The spokes are put together without a hub, under pressure, the spokes interlocking one another. Being the same width in the center of the hub as on the outside, they cannot loosen. For the same reason the tenon of this spoke is longer than that of any other, permitting the use of a hub of a smaller diameter, yet still retaining the same spoke support.

When hub flanges are bolted on they have the same appearance as any other artillery wheel

THE SCHWARZ WHEEL COMPANY

Office, Mint Arcade Building, Juniper & Chestnut Sts., Philadelphia

Factory, 20th and Glenwood Ave.

Columbia

Gasoline Cars for 1906

ARE built of the best materials in the world under methods and processes more advanced than those employed in any automobile factory other than our own. No consideration of the cost of production has been permitted to interfere with making perfect every part and piece of each model, whether pertaining to mechanism, bodywork or general equipment. The expense of making the crankshafts, for instance, is six times greater than that of any previously made in this country. We guarantee that these cars, each according to its power and place, will yield the greatest things possible in motor service.

MARK XLVII 40-45 h. p. four-cylinder motor under forward bonnet; sliding gear transmission, four speeds and one reverse; jump spark ignition from storage battery; new pattern automatic carburetor; special chrome-nickel steel gears, axles, crankshaft and jackshaft; crankshaft machined cold out of solid block; double chain drive; I-beam front axle forged in one piece; pressed steel frame, 108-inch wheel base; seat starting, new pattern brakes. Price, with standard body $4,500
With 125-inch wheel base, Royal Victoria, Double Victoria, Limousine or Landaulet body ..... $5,000 to $5,500

MARK XLVI An entirely new model. 24-28 h. p. four-cylinder vertical water-cooled motor; shaft drive, sliding gear transmission, three speeds and reverse; low tension mate and break magneto current ignition; special chrome-nickel steel gears and shafts, crankshaft machined cold out of solid block; I-beam front axle forged in one piece; rotary pump oil lubrication; pressed steel frame, 95-inch wheel base; double side entrance body seating five passengers. Price $3,000

MARK XLIV-2 Perpetuating Mark XLIV, one of the most successful of medium weight 1905 cars. 16 h. p. double opposed horizontal motor under forward bonnet; frame length increased eight inches, giving ample room forward of each seat; wheel base increased to 90 inches. Rear seat widened five inches; double side entrance body. An ideal family car, which will climb any hill and maintain a speed of 35 miles per hour on the level. Price $1,750

Columbia Electric Carriages

Victoria-Phaetons, Runabouts, Broughams, Landaulets
Hansoms, Surreys, Delivery Wagons, Trucks

Separate Catalogues of Columbia Gasoline Cars, Columbia Electric Carriages and Columbia Electric Commercial Vehicles will be sent on request

We shall exhibit at Madison Square Garden only January 13-20

ELECTRIC VEHICLE COMPANY, HARTFORD, CONN.

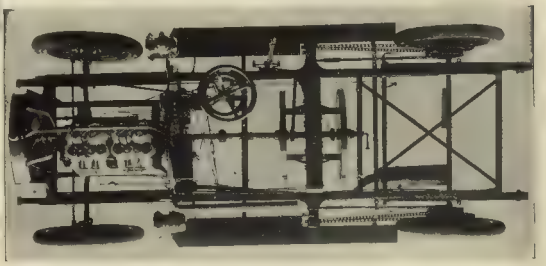
NEW YORK BRANCH: 134-136-138 West 39th St. CHICAGO BRANCH: 1332-1334 Michigan Ave. BOSTON: Columbia Motor Vehicle Co., 74-76-78 Stanhope St. PHILADELPHIA: Pennsylvania Electric Vehicle Co., 250 N. Broad St. WASHINGTON: Washington E. V. Transportation Co., 15th St. and Ohio Ave. PARIS: A. Bianchi, 194 Boulevard Haussmann

Member Association of Licensed Automobile Manufacturers.

THE WINDSOR

A CAR WITHOUT GEARS

THEREFORE WITHOUT TROUBLE



40 H. P. Price $2500

Simple, Safe, Durable and Powerful

ONE LEVER operates either forward or backward.
ANY SPEED desired. No set speeds.
LIGHT WEIGHT As all the usual heavy parts are elimina'ed.
OUR 40 H. P. ENGINES and our rolling traction transmission develop 20 per cent. more power than any geared transmission.

WRITE FOR CATALOGUE
GIVING ALL DETAILS

Secure agency before too late. :-: Our product limited

WINDSOR AUTOMOBILE CO.

WINDSOR, INDIANA

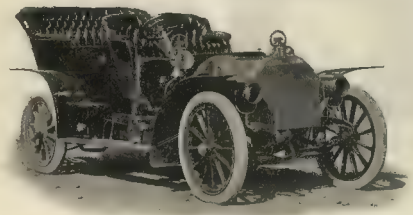
Atlas GASOLINE TRUCKS

Type "A," 4000 Lbs. Capacity **Type "B." 6000 Lbs. Capacity**

1906 models with many improvements and new features now ready for delivery.
New model "C" heavy delivery wagon, 3000 lbs. capacity, equipped with 25-H. P. two-cylinder, two cycle motor, for spring delivery.
Send for circulars.

KNOX MOTOR TRUCK CO., Springfield, Mass., Not KNOX AUTOMOBILE CO.

AMERICAN MERCEDES



The mechanical construction of the 1906 American Mercedes is as perfect in its working as nature itself, even to the smallest detail. Our ownership of all the patents, designs and shop-drawings of our parent company, **The Daimler Motoren Gesellschaft of Germany**, for the United States and Canada, enables us to make an exact copy of the German Mercedes. All vital parts are imported.

Paris price of the Mercedes, $7,500 **New York price of the American Mercedes, $7,500**

"SAVE THE DUTY"

DAIMLER MANUFACTURING COMPANY, 963 Steinway Ave., Long Island City, N. Y.
Write for book let **New York City Branch, No. 10 West 60th St.**

THE best storage battery to buy for ignition work on either one or on two cylinder cars, all things considered, is the Monitor Type, No. 6. - **Price, $9.00**

VOLTAGE, 6.
CAPACITY 20 AMPERE-HOURS.
DIMENSIONS—5" x 8½" x 7¾" HIGH.

The size adapted for the larger cars is the Monitor Type B. 6:
Price, $18.00

VOLTAGE 6.
CAPACITY, 45 AMPERE-HOURS.
DIMENSIONS—5" x 9" x 7¾" HIGH.

Other sizes and styles will be supplied in either metal or wood casing of any desired voltage or capacity and ranging in price from $3.25 upward. Send for descriptive catalogue, which will tell why it pays to buy "American" storage batteries.

American Battery Company
172-174 So. Clinton St.
Established 1889 CHICAGO, ILL.

MR. AGENT

Thomas Motorcycles

Will not be exhibited at ***The Show***, owing to our not being able to secure satisfactory show space, but will be on exhibition at our New York agent's store, F. B. Widmayer, 2312 Broadway. Call and see the ***Motorcycle that's different***, you can't afford to miss it.

THE THOMAS AUTO-BI. CO.
1453 Niagara St., Buffalo, N. Y.

The 1906 Thoroughbred Motor Cycle.

Quite a number of improvements in detail are comprised in the 1906 Thoroughbred Motor Cycle, put out by Reading Standard Cycle Mfg. Co., Reading, Pa., and in general appearance it differs considerably from the 1905 model. The gasoline and oil tank is placed in the diamond of the frame instead of over the rear mud guard, and in this new placing of the tank it seems that a gain has been made in protecting the same from knocks. This position also allows of making the tank more substantial and makes it a factor in steadying the machine, as it helps to lower the centre of gravity. The oil compartment of the tank is fitted with a device which is operated from the seat and forces oil into the cylinder, permitting the rider to oil the motor without dismounting.

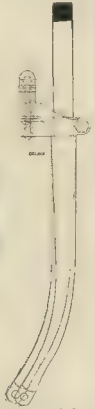
The 1906 Thoroughbred Motor Cycle.

The projectile-shaped battery case formerly attached to the lower tube has been dispensed with and a different shaped case holding 3 cells is now attached at the rear. A new saddle of English make is used, and it is likely that a spring seat post will be adopted.

One of the most important improvements is the new cushion fork which has been thoroughly tested during the past season. It consists of few parts and has only 3 brazed joints. The Reading people claim for this fork not only ample resiliency but plenty of strength, and these are the two important essentials in a spring fork. The guard attached to the fork extends over the top of the wheel and is supported by braces front and rear.

The top and bottom bars of the frame in the 1906 model are heavily reinforced and a one-piece head is used. The rear forks and stays are altered to accommodate a 2¼-inch rear tire, which is fitted to the 1906 machine. The chain line is widened from 1⅝ to 1 15-16 inches, giving more room between the engine base and side of chain, and therefore providing space for a longer bearing in the engine base for the crank shaft.

A coaster brake ⅜ inch wider over all is used and ¼ inch wider between flanges. The cylinder bore and stroke have been increased to 2⅝ and 3¼ inches respectively, thereby increasing the power of the motor considerably. The Thor motor which is used on the Thoroughbred has also been improved in other features. The carburetor stem has been altered so that it is no longer necessary to connect the same to the upper bar. The carburetor has also been improved internally, causing it to give a better mixture. A new cam lifting arrangement has been devised, which is oil tight and gives a roller contact.



Spring fork of the 1906 Thoroughbred Motor Cycle.

The Thoroughbred "Tri-car" is built with a side wheel attachment, and is furnished with a comfortable cane seat or can be furnished with a combination seat and delivery can, or with a delivery can only.

This tri-car weighs complete with cane seat about 185 lbs. Its carrying capacity is 500 lbs., and its speed from five to twenty miles per hour. A feature of this car is that the track can be adjusted from 44-inch to full width of track.

The principal advantage of this car is that it can be easily detached, converting the machine into the ordinary motor cycle. The simplicity of this attaching or detaching the car from the motor cycle is quite a feature and a great convenience to the owner, as it requires only a few minutes to make the change. In this machine the operator's view in front is not obstructed, the operator and companion sit side by side and conversation is not difficult. The building of a fore-car is also in contemplation.

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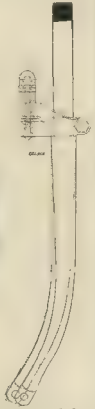

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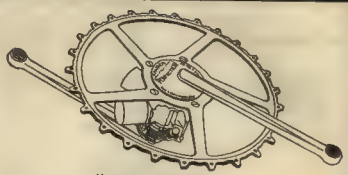
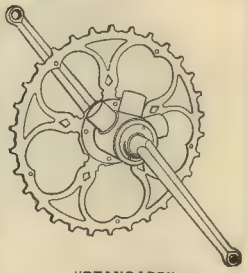
FAUBER

REGISTERED
TRADE MARK
[PATENTED]



"PERFECTION"

Fauber Patent One Piece Crank Hangers



"STANDARD"

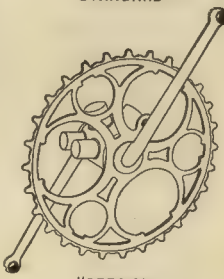
will maintain for 1906, the same high standard as in the past,—that which has made them universally recognized as the best equipment for bicycles.

The fact that they are in one piece only will be appreciated as a distinct improvement over the old-style jointed cranks.

Write us for prices.

Do not buy a bicycle for the future unless protected by our patents.

Order all future bicycles with Fauber Cranks, your manufacturer can supply them.



"SPECIAL"

Great Western Mfg. Company

La Porte, Indiana

EXPORT REPRESENTATIVES:

Guiterman, Rosenfeld & Co.

35 South William St., N. Y. City

—ALSO—

LONDON PARIS HAMBURG

—THE 1906— THOROUGHBRED

A machine of the highest efficiency and perfection, worthy of its name—**THOROUGHBRED.** We have improved upon our 1905 model in every way possible, with the result that in perfection of detail, strength, power and beauty of appearance, the 1906 **THOROUGHBRED** is without an equal.

The position of the gasoline and oil tanks has been changed, as they are now placed in the diamond of the frame, offering them more protection, and steadying the machine by lowering the center of gravity. By means of a new oiling device operated from the seat, the rider may oil the motor without dismounting—an obvious advantage.

A Battery case, holding three cells is now attached at the rear, the long and expensive projectile battery having been dispensed with.

A new saddle of English make, second to none in quality and appearance will be used. It is also likely that a spring seat post will be added, as we are now making tests of this device.

The new Cushion Fork is probably the most important improvement. It has been thoroughly tested the past season and is a pronounced success. It has twice the spring and strength of other forks, and consists of fewer parts, having only three brazed joints. The top and bottom bars are heavily reinforced, and a one-piece head is used. The rear forks and stays are altered to accommodate a 2½" rear tire, which is fitted to the 1906 machine.

The cylinder bore and stroke have been increased to 2¼" and 3¼" respectively, thus increasing the power of the motor considerably. The **THOR MOTOR** which is used in the **THOROUGHBRED** has been improved in other features also, several changes in the carburetor resulting in a better mixture.

The effective grip control will be continued as heretofore

While the **THOROUGHBRED** in the past has been eminently and wonderfully successful, the improvements in the new model are calculated not only to keep it in the lead, but to give such an amount of comfort and motor cycle perfection to the rider as to assure absolute satisfaction.

If you want to rider a "winner"—get the **THOROUGHBRED.**

If you want to handle a motorcycle that will prove a money-maker, write for the **THOROUGHBRED** agency.

See the advertisement of our 1906 bicycle line on page 252

READING STANDARD CYCLE MFG. CO., READING, PA.

Leavitt & Hill San Francisco, Cal. Distributors for the State of California.
Scott Supply & Tool Co., Denver, Colorado.—Distributors for the Rocky Mountain States.

Clean Up With

the wonderful new cleanser

MOBO

During a long run, the mud and dirt is bound to dry and harden on the machine. If rubbed off—the surface is scratched beyond redemption. If simply washed off—ugly stains remain which are likewise unremovable outside of the paint shop.

The only way to thoroughly clean the car, and at the same time preserve the lustre of the highly polished surface, is by using Mobo. A pure vegetable oil product which quickly removes grease and dirt of any kind. Prevents blistering and cracking of the paint and varnish. Can be used on harness and leather goods also woolen fabrics. So harmless that it will not injure the most delicate skin.

Put up in 2 lb. and 8 lb. cans; also in tubs, half barrels, and barrels. If your supply house does not keep it, send us his name and address—we will see that you are supplied.

JOHN T. STANLEY, 646 W. 30th St., New York.

"Favorite" Bicycles

Adult and Juvenile For 1906

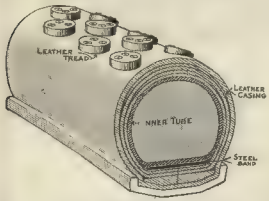
Our proposition will convince you where to place your business

The Fittest has Survived

THE TOLEDO METAL WHEEL CO., TOLEDO, OHIO

Mesinger Pneumatic Leather Tire

H. & F. Mesinger Mfg. Co., 1801-1807 First avenue, New York, have, after exhaustive experiments and tests, brought out a leather tire for automobiles. The casing is made entirely of leather and no canvas, fabric or rubber is used in its construction. The leather is oil finished and is very pliable. This casing is of laminated form, the various layers of leather being thoroughly cemented together. The inside of the casing is perfectly smooth and cannot injure the inner tube. The tread of this tire is formed of



Mesinger Pneumatic Leather Tire.

small discs fastened to the leather casing by screws. When these discs become worn off, new ones can be put in their place. The tire is fastened to the wheel by a steel band inside the casing, the ends of the band being tightened together against the rim by a nut.

In a test of this tire, the company run it over 1000 miles, after which it only showed but slight wear on the centre of the tread. During the test one of the tires was run 15 miles deflated without injury to the casing.

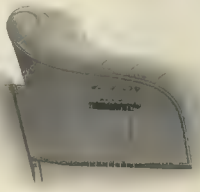
The Mesinger Co. will exhibit their tire at the New York show at Madison Square Garden, where they have space No. 205 on the second balcony.

Gabriel 8-Chime Horn

Gabiel Horn Mfg. Co., of Cleveland, Ohio, have brought out an 8-chime style of the Gabriel horn. They have been making heretofore, 2, 3 and 4-chime horns, but this addition to their line is a strictly musical instru-

The Gabriel 8-chime horn.

ment, the eight tones produced enabling the operator to play any ordinary tune, which is accomplished by means of a keyboard attached at the side of the car near the seat. The tone is beautifully modulated and very harmonious. The horn is attached to either side of the car and is blown by the engine exhaust, which is regulated by a valve which the Gabriel Company manufacture in connection with the horn. This valve is worked by a pedal.

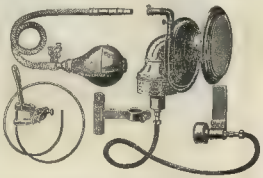


Keyboard of Gabriel 8-Tone Chime.

Gabriel Horn Mfg. Co. are owners of patent No. 802,386, dated Oct. 24, 1905, on horns of this kind, and have commenced proceedings against alleged infringers of this patent. They are ready also to assume the expense of defending suits should any be brought against their customers.

Miller Combination Siren Horn

Chas. E. Miller, 97-101 Reade St., New York, is marketing a siren horn which differs from the average because of the fact that it is a combination of the ordinary horn and the power operated siren horn; that is to say, it is fitted with a horn similar to La Bassoon horn, with screen and flexible tube, hand operated through a medium of a rubber bulb.



Miller Combination Siren Horn.

and also by a mechanical device operated by a friction pulley brought into contact with the flywheel of the motor by means of a lever or pedal. This combination produces a blast of moderate tone for use in crowded thoroughfares, where the car moves at slow speed, and a louder blast for the open country. Price is $50.00.

Stevens-Duryea

Four-Cylinder, Twenty-Horsepower

TOURING CAR - PRICE, $2500

Ask your auto agent for "The Twentieth Century Hustler" or SEND TO US FOR IT.

IF you really want to know what car is having the least tire trouble, ask the tire makers. They will all tell you that in all their experience they have never seen or heard of any car that had so few punctures and that wore so little on tires as the

Stevens-Duryea.

J. STEVENS ARMS & TOOL CO.

700 MAIN STREET

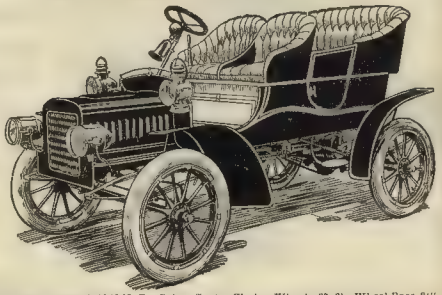
CHICOPEE FALLS, MASS., U. S. A.

Members Association Licensed Automobile Manufacturers.

THE HONEST BUILT CAR

The

LEADER



MOTOR, 2-cylinder opposed, 16-18 H. P.; Drive, Center Chain, Wheels, 30x3½, Wheel Base, 84". Transmission, Ball Planetary Body, Detachable side entrance Tonneau; Equipment, 5 lamps, horn, generator, tools. Weight, 1600 lbs. **Price, $1000.00.**

RUNABOUT, double opposed, 12 H. P. motor, 3x26" Wheels. **Price, $800.00.**

Write us for complete details and agency proposition.

COLUMBIA ELECTRIC CO.

Main Office, 23 E. Ohio Street **INDIANAPOLIS, IND.**

Factory, McCordsville, Ind.

1906 Announcement

The Jones-Corbin Car

(The Automobile for discriminating buyers)

45 H. P. Touring Car, -	$4500.00	45 H. P. Car with Victoria top	$4750
45 H. P. Car with Cape top,	$4650.00	45 H. P Car with Limousine body,	$5000

SEATING CAPACITY—Five. WHEEL BASE—112 inches. WEIGHT—2700 lbs.
ENGINE—Four cylinder, vertical, water cooled, mechanical valves.
CYLINDERS—5x6.
TRANSMISSION—Four speeds forward and one reverse. Direct drive on high. Power transmitted to rear wheel by the double chain method. External and internal brakes on rear wheel drum. HESS-BRIGHT BALL BEARINGS throughout engine, transmission, wheels, etc.
MECHANICAL PUMP OILER. TWO SYSTEMS OF IGNITION—Magneto and battery. TIRES—Continental, 4x5 in. rear, 34x4 in. front.
Equipment includes full set of tools, lamps and Gabriel Horn.
For further particulars send for booklet.

Jones-Corbin Motor Co., 430 Walnut St., Philadelphia, Pa.

TORBENSEN AIR-COOLED MOTORS

2-30 H. P., 6 Cyl. Air-Cooled Motor for pleasure cars Advantages Smoothness of running, with constant torque.

Reduces weight of car from 3 to 600 lbs. Simpler than an ordinary 4 cyl. water-cooled motor, and less liable to derangement.

Efficient cooling.

Perfect automatic force feed lubrication to each cylinder and bearing.

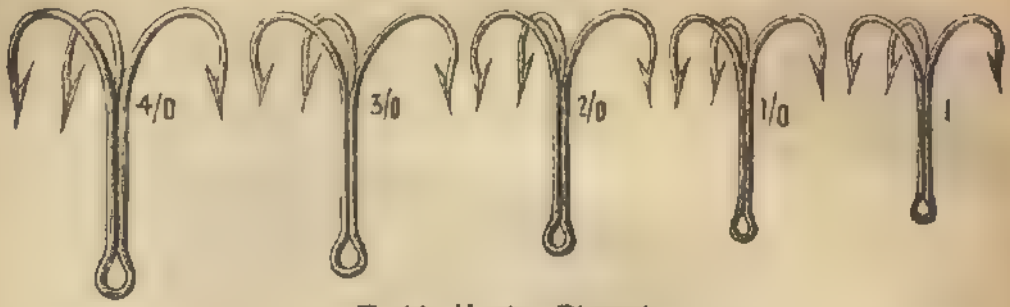
Saving in space. This Motor takes up less room fore and aft than an ordinary 4 cyl. water-cooled Motor of equal power.

TORBENSEN MOTOR CAR COMPANY

BLOOMFIELD, N. J.

3 CYL. AIR-COOLED MOTORS FOR TRUCKS AND COMMERCIAL CARS DEMONSTRATION AT OUR FACTORY.

BRIGHT TREBLE HOOKS, RINGED OR TAPERED



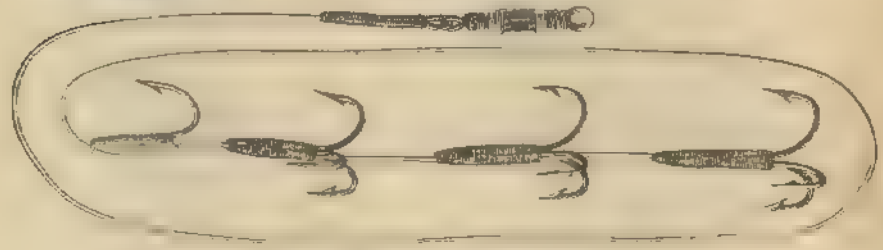
Treble Hooks, Ringed

6-0	5-0	4-0	3-0	2-0	1-0	1-12	size
80c	**70c**	**65c**	**60c**	**50c**	**50c**	**40c**	per dozen

Tapered Treble Hooks same price as ringed.

Feathered Treble Hooks

Assorted sizes, **$1.30** per dozen.



Gangs on Gut or Gimp

1 yard Gimp, 1 Swivel, 1 Single Hook, 1 Double Hook, 1 Treble Hook 40c
1 " Gut, 1 " 1 " 1 " 1 " 35c

Artificial Minnows

English Phantom Minnows

Celebrated Phantom Minnows, made of silk, coated with rubber, very light very lifelike, for black bass and pickerel

Nos.	3	4	5	6	7	8
Length ins.	2½	3	3½	4	4½	6
Price	75c	75c	75c	80c	$1	$1

American Phantom Minnows

Nos.	1	2	3	4	
Length ins.	2	2½	3	3½	3½
Price	50c	50c	50c	50c	50c

See Terms page 3, and Discount sheet next back cover.

Devon Minnows

Made of metal, nickel-plated.

Nos.	2	3	4
Length, inches	2¼	2½	2¾
Price, each	60c	60c	60c

The Trory Minnow

A Great Killer for Casting

More durable than any other Minnow on the market. The body of this Minnow is made of light wood, highly decorated, very buoyant, and is so weighted and balanced with lead that the instant it strikes the water, it swims upright with the head leaning slightly down. Both spinners work freely, and very materially add to the attraction.

Price .. .. **$1.20 each**

Hard Rubber Minnows

Nos.	7	8	9
Price, each	$0.80	$1.00	$1.20

Shakespeare Baits

Shakespeare "Revolution" Bait for trolling and bait casting. A floating bait with double spinner, good for either large or small mouth bass.

Price .. .. **$1.10 each**

Shakespeare Worden "Bucktail" Spinner. Same general description as "Revolution," with one spinner and bucktail fly.

Price **$1.20**

St. Lawrence Gangs

The above gangs have elastic spring steel H. P. Treble Hooks, bronzed, with baiting needle, adjustable lip hooks, and best quality treble swivels mounted on best quality silk gimp. They can be adjusted instantly to any size minnow, and will not kill the same. The Treble Swivels give positive revolution of the bait, making it impossible to kink or twist the line. Sewed on a bronze printed card, and packed one card in a box. Six of these boxes in a carton.

No —	1	1-0	3-0
Price	**70c**	**80c**	**90c each**

See Terms page 3, and Discount sheet next back cover.

TRIMO PIPE WRENCHES.

FIG. 5573

DESCRIPTION, FIG. 5573.

This Wrench is drop forged from steel, and is interchangeable in all its parts. Does not lock upon the pipe, but releases its hold readily. Grips the pipe firmly without lost motion. Does not crush the pipe nor slip.

PRICES, FIG. 5573.

Length of handle	8	8	10	14	18	24	36	48
Capacity	⅜ in. wire to ½ in. pipe	½ in. wire to ¾ in. pipe	¾ in. wire to 1 in. pipe	1 in. wire to 1½ in. pipe	1½ in. wire to 2 in. pipe	1½ in. wire to 2½ in. pipe	2 in. pipe	2½ in. pipe
Price	$2 00	$2 00	$2 25	$3 00	$4 00	$5 00	$6 00	$8 00

FIG. 5574

FIG. 5575

FIG. 5576.

FIG. 5577.

FIG. 5578.

PRICES OF PARTS FIGS. 5574 TO 5578.

Movable jaw complete	$0 17	$0 17	$0 [illegible]	$ 30	$1 [illegible]	$2 [illegible]	$4 [illegible]	$5 00
Movable jaw, each	10	10	27	[illegible]	[illegible]	[illegible]	[illegible]	80
Inserted jaw	25	25	33	[illegible]	[illegible]	[illegible]	[illegible]	80
Nut	15	15	15	15	15	15	15	15
Spring and pin	08	08	08	08	08	08	08	08
Frame complete	08	08	08	08	08	08	08	08
Jaw, screw only	08	08	08	08	08	08	08	08

TRIMO SPECIAL NARROW JAW WRENCHES.

FIG. 5579

DESCRIPTION FIG. 5579.

This Wrench is designed for close quarters work. The jaws are arranged [illegible] and will take pipes [illegible] wrench is light in weight and particularly designed for steamfitters' use. Very handy around an automobile or [illegible]

PRICES, F. G. 5579.

6 in. takes ⅛ in. wrought iron to ½ in. pipe	each	$2 00
8	"	2 25
10	"	2 35

WITH SCREW DRIVER

FIG. 5580

DESCRIPTION FIG. 5580.

This Wrench is [illegible] designed for [illegible] fitters' [illegible] close [illegible] The jaws [illegible] are also cut to [illegible] pipes while the wrench [illegible] the [illegible] pipe. [illegible] wrench [illegible] to [illegible] screw [illegible] Made [illegible] and only [illegible]

PRICES, FIG. 5580.

Polished	each	$2 25
Nickel plated	each	2 50

LIGHTNING COMBINATION PIPE AND NUT WRENCHES.

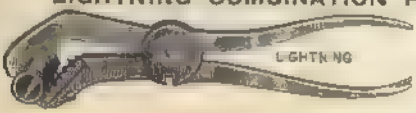


FIG. 5581.

DESCRIPTION FIG. 5581.

The Lightning Wrench [illegible] to [illegible] with [illegible] and is always ready [illegible] [illegible] [illegible]

WELLS PIPE WRENCHES.

FIG. 5583

DESCRIPTION FIG. 5583

These Pipe Wrenches are drop forged from a superior grade of tool steel. The yokes are made from sheet steel [illegible] the open side [illegible] The [illegible] Pipe with less [illegible] It [illegible] under the jaw [illegible] a pipe [illegible] but Wrench will [illegible] work on pipe. The [illegible] each are furnished with wood handles [illegible] be a very convenient shed with or handles.

PRICES FIG. 5583

Length open, inches, [illegible]	8	8	10	14	18	24	36
Takes pipe, inches	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible] each,	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wood handles, each	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Springs, each	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

AMERICAN PIPE WRENCHES.

STYLE A

FIG. 5584

STYLE B

FIG. 5585

DESCRIPTION FIGS 5584 AND 5585

These Wrenches are made of the best material throughout, and are very strong [illegible]. They grip the pipe firmly, do [illegible] A [illegible] with hook or inserted jaw. It is most desirable for [illegible] work, as it does not mutilate the work. Both [illegible] in both front and rear jaws, same as other makes of pipe wrenches.

The parts are interchangeable and can be replaced at small expense when necessary. Made of [illegible] steel, with [illegible] frame and jaws, and japanned handle.

PRICES FIGS 5584 AND 5585

Length closed, inches, [illegible]	6	8	[illegible]	[illegible]	[illegible]	[illegible]
Takes pipe, inches, [illegible]	½ to ½	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Complete, each, [illegible]	$2 00	$2 50	$3 [illegible]	$4 00	$5 00	$7 00
Jaws, each, [illegible]	60	60	[illegible]	1 00	1 25	1 00
Nuts, each, [illegible]	[illegible]	[illegible]	25	35	45	50
Inserted jaws, each [illegible]	[illegible]	[illegible]	35	40	40	60

THE FAIRBANKS COMPANY

SURVEYING COMPASSES.

No. 2753-75 and No. 2753-85.

Tudor's.

For Land Cruisers and Prospectors

In running a line in any direction, you have only to put the letter indicating that point of the Compass in which direction you wish to run your Line under the Needle, and the Line on the Lid will sight in the direction to which you wish to run your Line. For instance, suppose yourself on a corner and wishing to run a Line due East: You find North with the Needle, and as soon as it has steadied down, turn the Box gently until the letter E comes directly under the Needle, and the Line on the Lid will then be pointing due East.

No. **2752-75.** A **3** Inch Varnished Box Compass with **2⅜** Inch Dial, Bar Needle, Jeweled Cap, Flat Dial, graduated in Degrees, Points East and West, Reversed, as on a Surveyor's Transit.....Each $2 00

No. **2753-75.** A **3** Inch Varnished Box Compass with **2⅜** Inch Dial, Bar Needle, Jeweled Cap, Raised Circle, points East and West, Reversed, as on a Surveyor's Transit.....Each 2 50

No. **2753-85.** (Large Size.) A **3½** Inch Compass with **2¾** Inch Dial, Bar Needle, Jeweled Cap, Raised Circle, Points East and West, Reversed, as on a Surveyor's Transit.....Each 3 00

No. **16133-75.** A **3⅛** Inch Compass with **2¾** Inch Dial, Bar Needle, Jeweled Cap, Raised Circle, Points East and West, Reversed, as on a Surveyor's Transit. Round Cornered Box.....Each 4 00

No. **16133-90.** A **3⅛** Inch Compass with **3⅛** Inch Dial, Bar Needle, Jeweled Cap, Raised Circle, Points East and West, Reversed, as on a Surveyor's Transit. Round Cornered Box.....Each 4 25

Nos. **16133-75** and **16133-90** are Exact Duplicates of the Gurley Compasses, as illustrated on page **454.**

The only other Compass arranged to do this work is Gurley's.

The LEAVITT SECONDARY DISTRIBUTOR

Leavitt Timer

Through its **unequaled simplicity** has clearly proven the superiority of this system of ignition. The past season's success has proved our claims.

Our primary timer is the fastest made, the least affected by wear. We have **absolutely solved** the question of **burned contact points.**

Our goods are fully guaranteed.

Submitted to Manufacturers on trial.

SEND FOR CATALOGUE AND PRICES.

Leavitt Distributor

THE LEAVITT SIREN HORN

AN IDEAL SIGNAL FOR MOTOR BOATS

Can be heard from three to five miles.

WE make two models, as illustrated, one driven by friction from the engine flywheel, and the other by hand, through a system of gears.

The Leavitt Siren Horn fills a long-felt want. See that your motor boat has this equipment.

Catalogue and Prices on Request.

Uncas Specialty Co.,

Norwich, Conn.

THE "SAVETY" TIRE PUMP

keeps the amount of air pressure in your tire just right, adding to its longevity, and ease of riding.

No. 1. Price, $5.00. With relief attachment, $10.00. Finely nickel plated.

No. 2. Price, $4.00. With relief attachment, $6.50

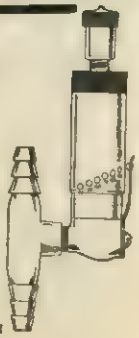
THE "SAVETY" RELIEF ATTACHMENT

is the only practical device for relieving over-pressure. Keeps the pressure just right, and will prevent much of your tire trouble.

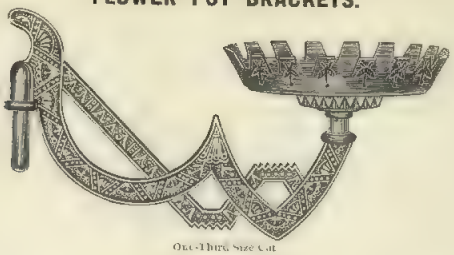
No. 1. Finely nickel-plated. Price, $5.00.
No. 2. " " " 3.00.

Use the "SAVETY" PUMP CONNECTION,—Price 35c.

ARTIZAN BRASS CO., 118 Michigan St., Chicago



FLOWER POT BRACKETS.



One-Third Size Cut

Iron, Amber Bronzed.

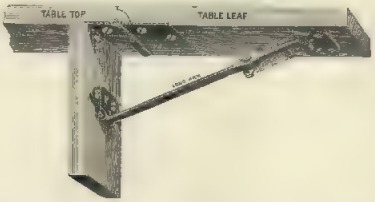
No. **320.**	Single Bracket, 6 Inch Cup.	Per Dozen $4 75
No. **360.**	Double Bracket, 6 Inch Cup	" 8 75

Iron, Gold Bronzed.

No. **325.**	Single Bracket, 6 Inch Cup.	Per Dozen $ 8 00
No. **365.**	Double Bracket, 6 Inch Cup	" 11 00

One-Third Dozen in a Box.

TABLE LEAF SUPPORTS.



When top of table projects from Base B to center of rivet on Hinge D	1-2	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	Inches
Place Flap F on Base B so that from under side of table to center of rivet in Flap F the distance will be						
When using No. 1 Support	$3\frac{1}{4}$	$2\frac{7}{8}$	$2\frac{1}{2}$	$2\frac{1}{4}$	$1\frac{7}{8}$	Inches
When using No. 3 Support	$4\frac{3}{4}$	$4\frac{1}{8}$	$3\frac{7}{8}$	$3\frac{3}{8}$	$2\frac{7}{8}$	Inches

No. **1.**	Iron, Coppered, Brass Spring	Per Dozen $1 65
No. **3.**	Iron, Coppered, Brass Spring, Larger	" 2 00

One Dozen in a Box

SHELF SUPPORTS.

No. 1767½.

Nos. 1764 and 1764½

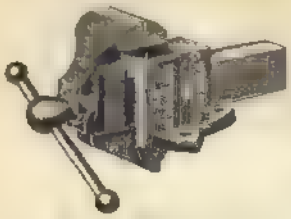
No. 718.

No. **1767½.**	Steel, Brass Plated	Per Gross $3 00
No. **1764.**	Steel, Nickel Plated	" 3 60
No. **1764½.**	Steel, Brass Plated	" 3 60
No. **718.**	Iron, Coppered	" 6 00

Half Gross in a Box.

VULCAN STATIONARY VISES.

SOLID STEEL FACED JAWS. EXTRA STRONG SLIDE AND SCREW



F. O. 6791. ROUND JAWS.

PRICES, FIG. 6791

No.	Length of Jaws, Inches.	Opens, Inches.	Weight, Lbs.	Each.
A	3	3	25	$4 00
B	4	4	38	5 00
C	4½	5½	46	6 00
D	4½	6½	60	10 00
F	5	7	84	12 00
G	5½	8½	100	18 00
H	6	9½	125	25 00

VULCAN SWIVEL VISES.

SOLID STEEL FACED JAWS. EXTRA STRONG SLIDE AND SCREW

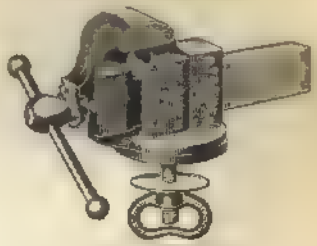


FIG. 6792. ROUND JAWS.

PRICES, F. O. 6792

No.	Length of Jaws, Inches.	Opens, Inches.	Weight, Lbs.	Each.
AA	3	4	28	$7 50
BB	4	5	37	8 75
CC	4½	6½	52½	10 50
DD	4½	6½	60	13 50
EE	5	7	84	18 00
FF	5½	8½	110	25 00
GG	6	9½	138	30 00

MONARCH MACHINISTS' VISES.

STATIONARY BOTTOM — SOLID JAW — SWIVEL BOTTOM

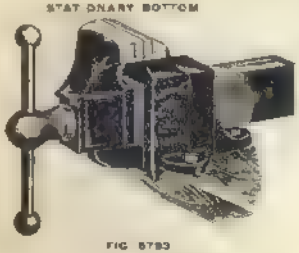


FIG. 6793.

PRICES, F. O. 6793.

No.	Length of Jaws, Inches.	Opens, Inches.	Weight, Lbs.	Each.
203	3½	4	25	$6 00
204	4	5½	35	7 00
205	4½	6	53	8 50
210	5	7	73	10 00
211	5½	8	93	12 00
212	6	9	109	16 00
213	6½	10	135	20 00

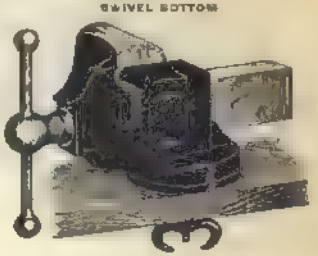


FIG. 6794.

PRICES, FIG. 6794

No.	Length of Jaws, Inches.	Opens, Inches.	Weight, Lbs.	Each.
214	3½	4	28	$7 50
216	4	5½	38	8 75
218	4½	6	53	10 50
220	5	7	84	13 50
222	5½	8	110	18 00
224	6	9	135	22 00
226	6½	10	155	30 00

MASSEY CLINCHER VISES.

PRICES FIG. 6795

No.	Width of Jaws, Inches.	Opens, Inches.	Weight, Lbs.	Each.	Weight, Lbs.	Each.
B0	3½	4	28	$6 00	38	$7 50
B1	4½	5	39	7 50	58	9 75
B2	4½	5½	48	8 50	72	11
B3	5½	6½	65	10 50	84	13
B4	6	7	70	12 50	105	15 00
B5	7	8½	95	17 00	1	23 00
B6	8	9½	135	25 00		31 00
*B7		10	200	35 00	220	40 00

STATIONARY BOTTOM

FIG. 6795

* No. B7 is especially suited for railway and large machine shops.

MACHINISTS' FIXED AND ADJUSTABLE JAW VISES.

HEAVY CHIPPING. STATIONARY BOTTOM.

FIG. 6796.

PRICES, FIG. 6796.

No.	58
Width of jaw, inches	8½
Jaws open, inches	12
Weight, lbs.	215
Each	$36 00

MACHINISTS' ADJUSTABLE JAW. SWIVEL BOTTOM.

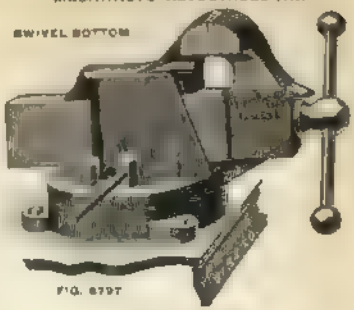


FIG. 6797.

PRICES, FIG. 6797.

SWIVEL BOTTOM.

No.	Width of Jaw, Inches.	Weight, Lbs.	Jaws open, Inches.	Each.
10	2½	24	4	$7 00
20	3	37	5	9 00
30	3½	52	6	11 00
40	4	70	7	13 00
50	4½	90	8	15 00
60	5	115	9	17 00
70	5½	145	10	20 00
80	6	185	12	23 00
90	6½	230	14	30 00

STATIONARY BOTTOM.

No.	Width of Jaw, Inches.	Weight, Lbs.	Jaws open, Inches.	Each.
5	2½	20	4	$5 00
15	3	30	5	7 00
25	3½	45	6	9 00
35	4	65	7	11 00
45	4½	94	8	13 00
55	5	125	9	15 00
65	5½	150	10	17 00
75	6½	160	12½	20 00

MACHINISTS' SELF ADJUSTING JAW. STATIONARY BOTTOM.

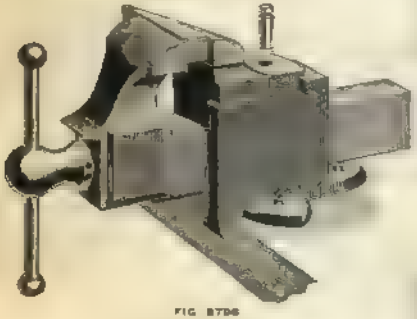


FIG. 6795.

PRICES, FIG. 6795.

SWIVEL BOTTOM.

No.	78	79	76	77	78	78½
Width of jaw, in.	3½	4	4½	5½	6	7
Jaws open, inches	4½	5½	6	8	9	11
Weight, lbs.	35	60	85	100	168	300
Each	$6 50	$10 00	$12 50	$19 00	$27 00	$35 00

STATIONARY BOTTOM.

No.	87	85	89	71	72	72½
Width of jaw, in.	3½	4	4½	5½	6	7
Jaws open, inches	4½	5½	6	8	9	11
Weight, lbs.	35	51	84	96	140	184
Each	$7 00	$9 00	$10 50	$17 00	$24 00	$30 00

MACHINISTS' BULL DOG. SWIVEL BOTTOM.

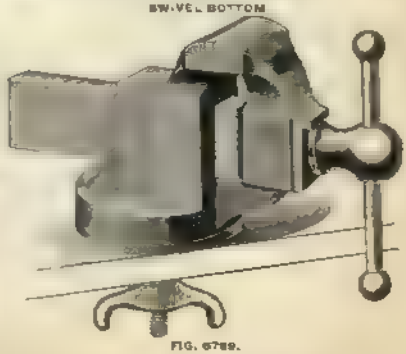


FIG. 6799.

PRICES, FIG. 6799.

STATIONARY BOTTOM.

No.	303½	304½	305½	306½	307½	308½	309½	310
Width of jaw, in.	3½	3⅝	4½	4⅝	5	5½	6	6½
Jaws open, in.	6	5	5½	6½	7	8½	9½	10½
Weight, lbs.	36	38	48	58	78	100	135	175
Each	$4 00	$5 00	$5 50	$10 00	$13 00	$16 50	$23 00	$30 00

SWIVEL BOTTOM.

No.	303½	304½	305½	306½	307½	308½	309½	310
Width of jaw, in.	3½	3⅝	4½	4⅝	5	5½	6	6½
Jaws open, in.	6	5	5½	6½	7	8½	9½	10½
Weight, lbs.	38	38	50	64	85	115	155	195
Each	$5 50	$6 00	$7 00	$13 50	$16 00	$20 00	$30 00	$40 00

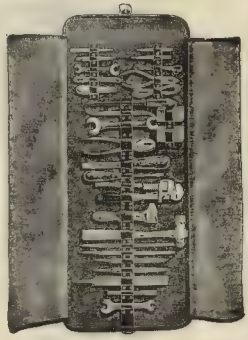
THE FAIRBANKS COMPANY

Latest and Best Auto Fabric Supplies

Patent Tire Cases

Also Storm Aprons, Auto Rain and Dust Aprons, Inner Tube Bags, Steering Joint Protectors, Sleeve Protectors. All Style Lamp Covers. New style featherweight waterproof Over Boots for men and women, and other necessaries. Send for Illustrated Price List.

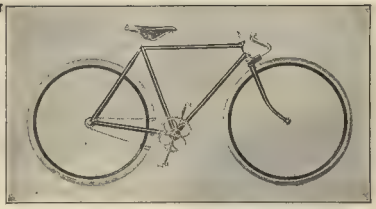
All Styles Tool Rolls



Nathan Novelty Mfg. Co.

88-90 Reade Street, N. Y.

Our 1906 Proposition is Now Ready



YALE and SNELL Bicycles for the coming season represent the best there is to be had for the money, quality, construction and reliability considered. They are money-makers for dealers, and satisfaction givers for bicyclists. The 1906 Model of the **YALE** represents the highest point ever attained in the construction of a bicycle. The grace of line, beauty of finish and delicacy of treatment throughout, combined with easy-running qualities, are characteristics which place this wheel in a class by itself.

Our line of **SNELL** bicycles for the coming year is an interesting proposition for any dealer. They represent a great value. Write us for catalog and terms.

Consolidated Manufacturing Co., Toledo, Ohio.

(Succeeding Kirk Mfg. Co., and Snell Cycle Fitting Co.)

SEE IT AT THE NEW YORK SHOW

Examine it carefully, and you will be convinced that it is the motor cycle to tie to. The only one built having a diamond loop frame and twin forks. Are you a **"Wagner"** agent for '06? If not! Why not?
Descriptive catalog and agency terms on application.

THE WAGNER MOTOR CYCLE CO.
327 St. Peter Street, St. Paul, Minn.

GEO. V. LYONS, N. Y. State Agency, 1900 Broadway, N. Y. City.
C. M. FRINK, Western Sales Agent, 648 S. Spring St., Los Angeles, Cal.

AUTOMOBILE STEERING GEARS

WITH OR WITHOUT THROTTLE CONTROL THROUGH CENTRE OF STEERING POST

Can be fastened to any VEHICLE

Worm and sector type no backlash. Dust and waterproof, positive—simple—durable. Adjustable for all wear.

YOUR LIFE
Depends on the Steering Gear

We do our best to make our device **SAFE—TRY JUST ONE!**—It won't cost much—You will be satisfied.

SAMPLE SENT TO RELIABLE FIRMS ON 30 DAYS TRIAL

Gears and **Gear Cutting** of all kinds. **Automobile Sprockets and Chains**

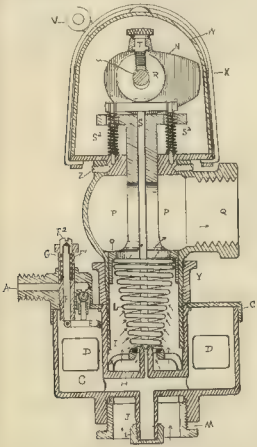
BOSTON GEAR WORKS, Boston, Mass.
AUTOMOBILE DEP'T

Walker Adjustable Throttling Ratio Carburetor

B. F. Walker, of Bridgeport, Conn., has placed on the market a carburetor which he calls an "adjustable throttling ratio" carburetor, because of the fact that it can be adjusted to positively give any desired ratio of gasoline to air throughout the throttling movement. The sectional illustration herewith shows all the parts in detail, which are lettered to correspond with the descriptive matter following.

In operation the gasoline enters inlet (a), passes through ball valve (b) to float chamber (c), and is controlled by float (d), raising lever (e) bearing against stem of ball valve (b), fulcrumed at outer end to plunger (f), passing through and held flexibly against seat of hollow screw (g) by means of spring (f) and cap nut (f2). The hollow screw is for the purpose of adjusting height of float by raising or lowering the fulcrumed end of lever (e), the plunger also acting as a flusher.

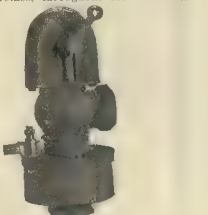
The gasoline flows from float chamber (c) through passage (h) to spraying nozzle (i). The air enters through opening (j) at the bottom of carburetor, passing upward through spider (h) between coils of spring throttle (l), as indicated by arrows. The spring throttle (l) is supported by a spider (k), which rests upon and may be adjusted by hollow screw (m) at bottom of carburetor, for the amount of air admitted at low throttle.



Sectional View of Walker Adjustable Throttling Ratio Carburetor.

The throttling of air is accomplished by the action of cam (n) on the hollow plunger (o), depressing coiled spring. Owing to the form of the spring, the larger coils closing first, concentrates the air closer and closer to the nozzle (i), producing a strong draft around same, thus thoroughly spraying the gasoline which passes through a gauntlet of sheets of air into mixing chamber (p), and so becoming thoroughly mixed and passes through outlet (q) into engine.

Cam (n) is divided, making two side walls, clamped between which is an eccentric (r) which acts upon needle (s), yieldingly supported on springs (s2) against adjustable eccentric (r), which can be adjusted in relation to cam (n) by means of screw (t) and may be set to give any desired amount of gradual feed of gasoline to air throughout the throttling movement. The drawing shows but one of the side walls of cam (n), and the eccentric (r) with adjusting screw (t). The plain outline of eccentric (r) shows the same, set central, without throw. By raising it, as indicated by dotted line, it will be seen that it can be given any desired throw between the two extremes, throughout the throttling



Walker Adjustable Throttling Ratio Carburetor.

movement, and being followed by the needle (s) through action of springs (s2) gives a corresponding opening to spraying nozzle (i). The amount of gasoline desired at low throttle may be obtained by screwing float chamber up or down, making more or less space between needle and its seat in nozzle. Passing through cam (n) and eccentric (r) is a shaft (u) having a lever (v) at one end, by means of which cam and eccentric are operated. (w) is a cover to protect the mechanism from dust; (x) is a spring clamp for holding cover in place; (y) a jam nut.

Float chamber (c) is screwed on bottom of carburetor body and retained in position by jam nut (y), which also retains cover (c) in any desired horizontal angle to body. (z-z) are retaining screws for top of carburetor, enabling the same to be placed at any desired horizontal angle to the body. I is a drain cap

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The subscription price of the CYCLE & AUTOMOBILE TRADE JOURNAL is $1.00 per year. This includes 4 or 5 special numbers which are worth 50c. each, in addition to the regular numbers. You will therefore receive $4 or $5 value for $1.00. Subscription blank will be found on page 444.

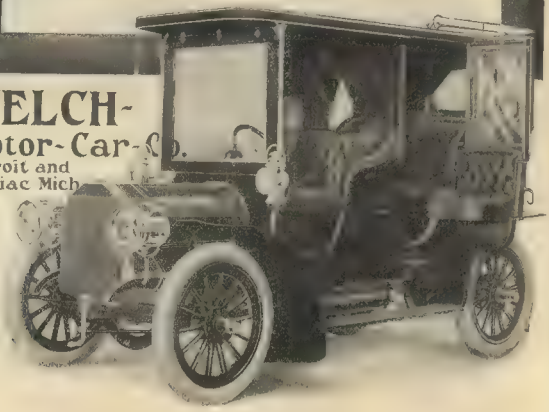
WELCH

50 ACTUAL HORSE POWER

A combination of imported steels and "hand" workmanship with American simplicity of design and interchangeability, makes of the 1906 Welch, a car equalled by none.

Buy a car whose vital points have been in use practically unchanged for several years, and that is being copied much more extensively by prominent makers than any other car in existence.

Buy one that is guaranteed to give better service the second season than the first, and that will not be a back number in six months through the caprice of the maker, a car that will carry you on the ***direct*** drive from four to fifty miles, or better, per hour, and take ninety-five per cent. of all hills on the high gear. ***Know*** what you are buying. Ask for our treatise on Horse Power and our latest catalog



WELCH-
Motor-Car-Co.
Detroit and
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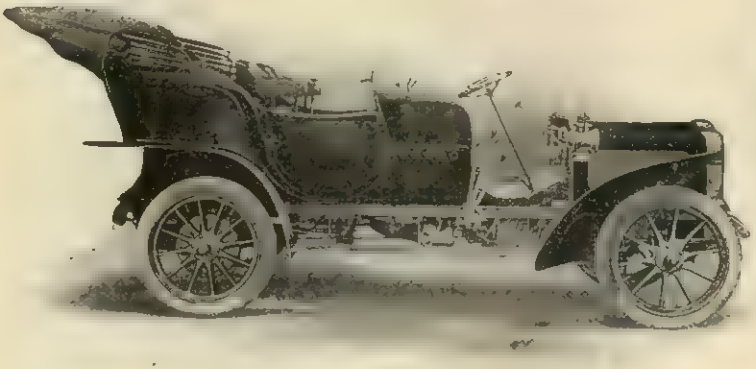
THE INCOMPARABLE

WHITE

THE CAR FOR SERVICE



NEW MODELS OF THE WHITE STEAM CAR

We will shortly offer a new car of 30 steam horse-power which will be larger, roomier, stronger and far more speedy than any which we have previously made. In its construction it will follow the general lines of the well-known White system, but with numerous important improvements suggested by the study and experience of the year. The various elements of the power plant—engine, generator, condenser, etc.—will be of increased dimensions and every part of the car will be brought up to a new standard of strength, more than proportionate to the increase in power. This car, to be known as the Model "G," will be fitted with two distinct styles of body; a Pullman body, seating seven (illustrated above) and a touring body seating five and having most ample provisions for carrying baggage.

We will also offer a smaller car to be known as the Model "H," which will closely resemble the present highly successful and popular Model "F," although the new car will have a somewhat shorter wheel-base. In the Model "H," which will be conservatively rated at 20 steam horse-power, will be incorporated a number of the improvements which will be found in our Model "G."

A Circular descriptive of the New Models will be mailed on request.

WHITE SEWING MACHINE COMPANY

Cleveland, Ohio.

1907 *Locomobile* CARS

Contain many features which increase the reliability and efficiency of a car, world famous for its intrinsic excellence and high quality. For 1907 we will build two models, both thoroughly tested and highly developed touring cars:—TYPE E a most convenient size to drive and maintain and can keep up with the fastest touring cars in a day's run. TYPE H, a touring car de Luxe. Powerful and luxurious.

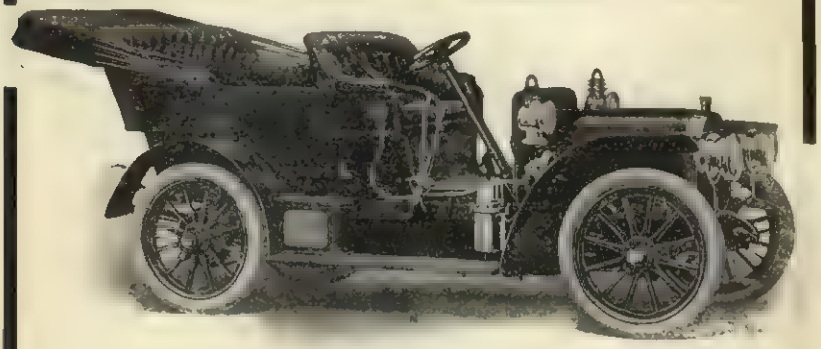
TYPE E. 20 H. P. $2800

4 cylinder motor, make-and-break ignition. 3 speed transmission, progressive system. Hess-Bright ball bearings throughout with exception of motor. 96" wheel base. Seats 5 persons comfortably. Tires 34 x 4 all four wheels. Fully equipped and ready for extended touring.

TYPE H. 35 H. P. $4500

4 cylinder motor, make-and-break ignition. 4 speed transmission, selective system. Hess-Bright ball bearings throughout with exception of motor. 120" wheel base. Seats 7 persons comfortably. Tires: front 34 x 4; rear 34 x 4½. Fully equipped and ready for extended touring.

SOME IMPORTANT DETAILS. Low tension magneto with working parts enclosed and protected. Igniter anvil made in solid unit. Mechanical Lubricator warmed by exhaust, out of the way, yet accessible for filling. Emergency brakes enclosed and protected. Body ironed for top and provided with brass coat rail, adjustable foot rest and other conveniences.



***Locomobile*—Type "E." $2800.**

Top Extra.

Printed matter mailed on application to factory or any branch office.
Buyers desiring to inspect our cars in the making, welcome at factory.

The *Locomobile* Company of America, Bridgeport, Conn.

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HOUSE DOOR HANGERS.

No. 106 Wilcox Prouty.

Ball Bearing Wheels with Hard Maple Track.

Full Set for **Double** Doors, with **14** Foot Track	Per Set	$5 00
Half Set for **Double** Doors, with **8** Foot Track	"	2 50
Extra Track	Per Foot	08½

DWARF HANGERS.

No. 130.

Steel, Bronze Plated.

For Light Doors, Sliding Show Cases, China Closets, Etc.

No. **130.** Straight. Length of Pendant, **7** Inches; Width, **1½** Inches; Thickness, **1-8** Inch; Wheel, **1½** Inches Diameter. Runs on **1-4** Inch Half Round Brass Rail. . Per Dozen Pairs $14 00

No. **134.** Offset. Length of Pendant, **7** Inches; Width, **1½** Inches; Thickness, **1-8** Inch; Wheel, **2** Inches Diameter. Runs on No. **990** ½ **3-4** Inch Brass Rail. .Per Dozen Pairs 14 00

One Dozen Pairs in a Box

No. 134.

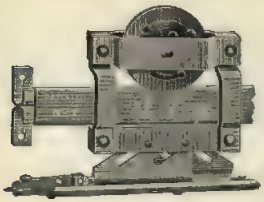
STORE LADDER FIXTURES.

Wilcox Ball Bearing.

A set of Fixtures consists of one ladder Crescent with two Ball Bearing Trolleys attached, two Roller Bearing Wheels for bottom of Ladder, and one pair Angle Irons. Fixtures furnished regularlyto fit Ladders **12** Inches wide, inside measure.

No **129.** Ladder Fixtures Complete	Per Set	$7 00
Trolley Track. No. **131.**	Per Foot	80
Brackets	Each	40

HOUSE AND AUDITORIUM DOOR HANGERS.



No. 1.

No. 5

Prouty.

Ball Bearing Wheels, with Vulcanized Fibre Tread.

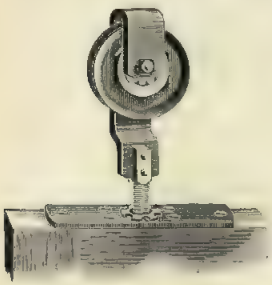
Track packed complete with Screws in bundles containing **14** Feet for Full Sets and **8** Feet for Half Sets. Wrapped complete in Express paper to hand over counter.

No. **1A.** Full Set, for Double Doors, with **14** Foot Track.....Per Set $5 00
No. **1B.** Half Set, for Single Doors, with **8** Foot Track..... " 2 50

Wheels Fitted with Special Noiseless Bearings.

Hard Maple Rail is mounted in a Felt Cushion, supported by Metal Case.

No. **5A.** Full Set, for Double Doors, with **14** Foot Track.....Per Set $5 00
No. **5B.** Half Set, for Single Doors, with **8** Foot Track..... " 2 50



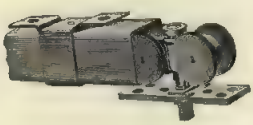
Lane's New Model.

Lane's New Model.

Full Set, for **Double** Doors, with **14** Foot Track.....Per Set $5 00

Half Set, for **Single** Doors, with **8** Foot Track.....Per Half Set 2 50

Extra Track.....Per Foot 09



No. 291

No. 291.

Swivel, Ball Bearing, Noiseless.

For Folding and Sliding Partition Doors.

The Track is supported by Brackets, which must be attached to Header by means of lag screws of sufficient size to carry the weight of the doors. Distance from under side of Header to top of door must be **4⅛** Inches. A half door must be placed at side of opening and hinged to a strip which is attached to jamb. These half doors must be exactly half the width of the full sized doors, less the thickness of the wood strip to which they are attached. The width of the full sized doors must be exactly the same, with edges perfectly parallel. Attach the hanger to the door so the threaded pendant is directly above the exact center of the door, both with respect to the width and thickness. Attach one hanger only, on every other door, beginning with door fartherest from half door.

No. **1.** Hangers, for Doors from **1¾** to **2¼** Inches Thick.....Each $4 00
No. **131.** Track .....Per Foot 25
No. **59.** Brackets .....Each 20

Be on the Safe Side

BY USING

G & J Oval Raised Tread Tires

These tires are made in the shape they assume in service, consequently there is no distortion of the fabric under load, and no danger of loose covers.

The flap prevents pinched tubes.

The shape of the tread assures just the right road contact.

STRONG - SERVICEABLE
COMFORTABLE

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Look at the Lea "Speedistimeter"

and your instantly know how fast your car is going, how many miles have been covered and what time it is.

Tells speed, distance and time of day

and you see it all without moving from your seat.

The clock is the high-grade 8-day Chelsea auto-clock movement and the entire instrument is so durable that it lasts as long as the car.

Attachment fixtures are universal and can be applied to any car without change. Flexible shaft which connects with wheel passes through floor of car and is entirely out of sight.

Accuracy guaranteed.

Immediate shipment.

Money back if not satisfactory.

Write for new "*Auto Meter*" book.

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WATCHES.

THE "INGERSOLL" WATCHES.

"Midget" Price **$2.00**

"Midget Artistic." Price **$2.50**

"Midget Rococco." Price... **$3.00**

LADIES' WATCHES—6-Size

"Midget."

This dainty little watch—the "Ladies' Ingersoll" as it is called is the first high-class timepiece of its kind ever sold at a popular price. It is just what the average woman needs—an attractive and serviceable watch that is not too delicate and does not get out of order easily and its low price makes it easy to replace if lost. The "Midget" is considerably smaller than the average 6-size case which is popularly sold for ladies and girls and is supplied in solid nickel and in gun-metal and gold plate finishes. The movement, which is stem-wind and set is similar to that used in other Ingersolls; but is much smaller and more finely adjusted.

Option of plain or fancy backs on nickel watches.

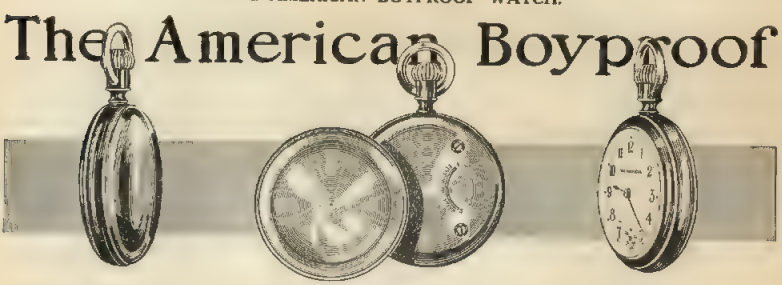
"Midget Artistic."

An exquisite little timepiece of rare excellence having the same movement as that in the regular "Midget," in a case of solid white metal finished in the fashionable French gray effect and with an elaborate relief design on back. This watch has a damaskeened movement plate and a porcelain dial, also many other refinements of detail.

"Midget Rococco."

A unique and striking timepiece, "something different" from the ordinary. Its case is an exact reproduction of the famous French models of like name, but without their defects, and vastly improved by American methods and material. Cases are made in three designs, handsomely engraved with relief patterns on back and highly artistic. Watch is stem wind and set, with snap back and bezel.

THE AMERICAN BOYPROOF WATCH.



(Note the double back and seamless cover on "The American" Watch, insuring absolute movement protection.)

Fully guaranteed for one year, stem-wind and set 16 size dust-proof and Boy proof. "The American" fills the need of the trade for a better protected low-priced watch.

Price.. .. .. .

WATCHES.

THE "INGERSOLL" WATCHES.

"Yankee."

MEN'S WATCHES—16 Size

This is the latest model of the famous Dollar Watch—standard bearer of the Ingersoll line, and for years the most popular timepiece in the world—now full stem-wind and pendant set and equal in every practical detail to the most expensive time keepers made. The watch in its present form is smaller and neater than any previous model and has a case that is substantially dust-proof. New and artistically designed dial and hands also add materially to its fine appearance

Like all other watches of the line, the Yankee carries the famous Ingersoll guarantee in the back of each case and the name Ingersoll is always on the dial. Cases made in nickel, gun-metal and gold plate finishes

"Yankee." Price.. .. .. **$1.00**

"Eclipse."

The "Eclipse" is another very well-known Ingersoll second in popularity only to the Dollar Watch, especially among those desiring elegance and simplicity in a timepiece It is distinctly high class, both mechanically and in appearance and it admirably meets the requirements of any one wanting 'something better' than the "Yankee" at a very slight additional cost The new model is fitted with a special movement, having one of the simplest and smoothest winding mechanisms ever adopted for a stem-wind watch, and its case, which is one of solid nickel, is furnished with either a plain, engine turned or fancy engraved back. Also finished in gun-metal or gold plate, the former with a gold plated metal dial, the latter with a plain or fancy engraved back Stem-wind and pendant set

"Eclipse." Price.. .. .. **$1.50**

"Junior."

The Junior is regular 12-size, both movement and case; (not a "built up" watch with a 6-size movement in a 12-size case), and is finely finished both mechanically and in appearance Fitted with a nickel, hand poised round balance, has damaskeened movement plate, and is equipped with a second hand. Case, which is snap back and bezel, is made of solid nickel, with antique bow and crown, and is finished also in gun-metal and gold plate finishes.

"Junior." Price.. .. .. **$2.00**

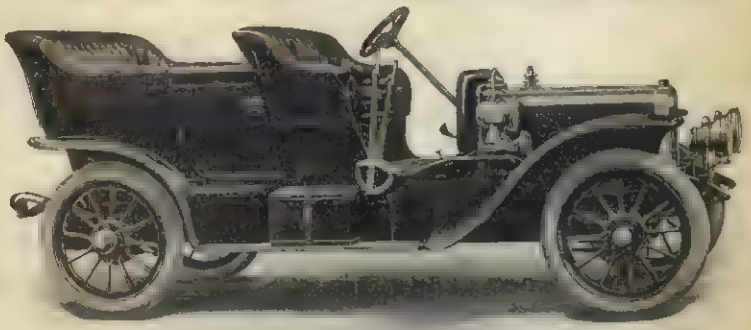
"Winner."

This is an accurate, serviceable and extremely durable watch selling at a popular price and answering the great demand which now exists, for a timekeeper of this class It has a heavy case of solid nickel, highly finished, which will wear indefinitely without changing in either color or appearance and is screw back and bezel, which renders it practically dust and water proof.

The "Winner" is a substantial watch that will appeal to all kinds of people—railroad men, miners, farmers, mechanics—in short, anyone requiring a timekeeper to withstand the hardest kind of wear. It is attractive, too, with a finely damaskeened movement plate and a dial with extra heavy figures that make it ornate as well as easily readable. The movement of this watch is specially constructed, and is designed, like the case, to stand hard use. It is fully guaranteed.

"Winner." Price.. .. .. **$2.00**

WINTON



TWO NEW MODELS

Both Winners

MODEL M

40-H. P., four-cylinder motor.
Carries seven passengers.
Four forward speeds, selective type.
Direct drive on third speed.
Multiple disk clutch.
Off-set cylinders—more power, no "knock" in cylinders.
Immediate accessibility of all working parts.
Interchangeable, mecuanically operated valves, all on one side.
One camshaft for all valves.
Off-set camshaft—less power required.
Horizontal drive shaft.
Mechanically throttled carbureter.
"Shooting" oiler, mechanically operated.
Improved Winton Twin springs.
Four brakes, all on rear hubs.
Ground-bearing surfaces.
Ball and roller bearings, properly distributed.
Floating type rear axle.
Tough I-beam Parsons manganese bronze front axle.
Jump spark ignition.
Centrifugal pump cooling.
Tested materials.
Wheelbase, 112 inches.
Gas, oil and tail lamps, trunk carrier, tools, horn, etc.
Price, $3,500 f. o. b. Cleveland.

TYPE XIV

30-H. P., four-cylinder motor.
Carries five passengers.
This car succeeds the wonderfully successful Winton Model K, and is both faster and a greater hill-climber.
Winton patented air control.
Individual clutch transmission.
Off-set cylinders—conserve power; eliminate the "knock."
Immediate accessibility of all working parts.
Valves all on one side of motor.
Only one camshaft.
Off-set camshaft—less power required.
Horizontal drive shaft.
Perfected carbureter.
"Shooting" oiler, mechanically operated.
Improved Winton Twin springs.
Four brakes, all on rear hubs.
One pedal and two levers operate all brakes and gear changes.
Ground-bearing surfaces.
Ball bearings in all wheels.
Heavy I-beam front axle.
Jump spark ignition.
Centrifugal pump cooling.
Tested materials.
Wheelbase, 104 inches.
Gas, oil and tail lamps, trunk carrier, tools, horn, etc.
Price, $2 500 f. o. b. Cleveland.

Descriptive advance circulars, covering each new model, are now ready. In writing please state whether you desire both circulars or only one. Circular No. 15 covers Model M. Circular No. 16 covers Type XIV.

The Winton Motor Carriage Co.

CLEVELAND, OHIO, U. S. A.

Member A. L. A. M.

WOMEN'S KHAKI OUTING SUITS.

Showing Norfolk Jacket and Plain Skirt No. 1724

We strongly recommend this clothing to the women folks to be worn on their summer outing, when hunting, fishing, camping or horse back riding is contemplated. It is very pleasing looking, well sewed and fitted. Made of Khaki Duck. It is the ideal garment in hot weather Khaki is worn by all Soldiers in the Tropics Stands hard usage, is not easily torn, does not show dirt easily, is washable and can be folded into the smallest possible compass when packing.

No. **1919.** Norfolk Jacket, (see illustration), Misses Sizes **14** to **18** Inches; Women's Sizes **34** to **42** Inches, same as illustrated. Two box pleats in back and two in front. All Felled seams in body of Jacket; two pockets fastened by four buttons; full sleeves; turned back cuffs; unlined. .....Each $ 2 75

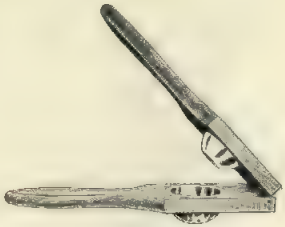
No. **1724.** Plain Skirt, Sizes **24** to **28** Inches, Length **39** to **43** Inches; seven gored, having pleat at each seam; inverted box pleated back, double row of buttons in front, three to the row. The row on the right in connection with inside hooks and eyes fasten the Skirt. An ample hem is left at the bottom of Skirt so that it can be lengthened if desired... .. Each $ 2 25

No. **1722.** Divided Skirt, Sizes **25** to **39** Ins While adapted for horse back riding, this Skirt may also be used for walking as well. Each leg or division of the Skirt is divided into four gores and has a panel in front which connects the two divisions of the Skirt when fastened, which is effected by a row of eight buttons. There is a corresponding row of eight buttons on the other side of the panel. Felled seams on the panel with double stitching gives the Skirt a particulary smart appearance. The panel when fastened makes the Skirt look like any walking Skirt instead of a divided Skirt, as the seams are so arranged in the back that it looks like an inverted box pleated back . . . . . Each $ 4 50

Showing Norfolk Jacket and Divided Skirt No. 1722.

LEMON SQUEEZERS.

No. 1.

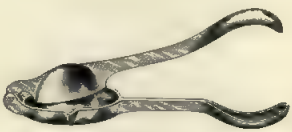


Picnic

No. 1. Wood Ball, Maple, 3 Inch Cup ..... Per Dozen $1 25

Picnic. Porcelain Ball and Bowl, Maple Handles " 2 50

Queen.



Boss.

Queen. Lignum Vitæ Ball and Bowl, Maple Handles, White Finish, Nickel Plated Hinge ..... Per Dozen $8 00

Boss. Malleable Iron, Triple Tinned ..... " 2 50

No. 1

No. 11

Little Giant

No. **1.** Japanned ... Per Dozen $6 00

No. **11.** Japanned, with Cap .... " 7 00

Yale-California

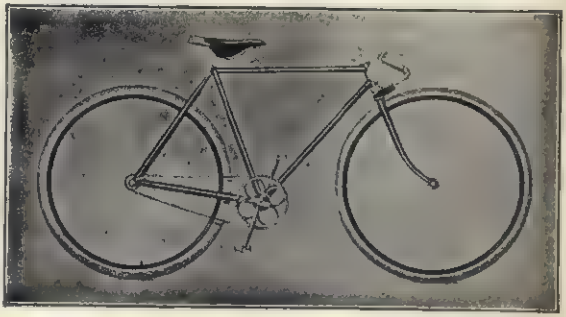
Weight, 110 lbs. Price, $175.00

The Yale-California Motorcycle is winning the deserved reputation of being the most satisfactory motorcycle on the market. Excellence of mechanical construction, great strength and speed are the most prominent features. It is a seller and a money-maker. If you would increase your business and make satisfied customers, sell the Yale-California.

Write at once for our catalog.

The Consolidated Manufacturing Co. Toledo, Ohio.

1906 Yale and Snell Bicycles



REPRESENT EXTRAORDINARY VALUE

BICYCLE DEALERS! If you want to handle a line of wheels that will prove easy sellers, secure the agency for the **"Yale"** and **"Snell"**. They have reached a point higher than that ever attained in the construction of a bicycle. It is better to sell the **"Yale"** and **"Snell"** Bicycles than to sell against this line. "A word to the wise is sufficient." Send for catalog and terms.

THE CONSOLIDATED MANUFACTURING CO.
TOLEDO, OHIO

THE 1906 YALE-CALIFORNIA

This is a new model of the

YALE-CALIFORNIA.

Its design and finish are superior to anything heretofore attempted in the motorcycle line. It is universally conceded to be one of the most beautiful, graceful, and mechanically perfect motorcycles on the market, and is **the one which runs all the time.**

Wherever it was found possible to make the slightest improvement, we spared no expense to accomplish the result, and the refinement in detail and construction makes it one of the strongest, lightest (100 pounds all on), most powerful and economical motorcycle in the world.

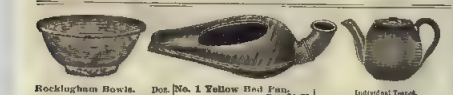
Dealers will find it absolutely the best proposition they have ever had in this line. Write early for territorial allotment. Agencies are being closed rapidly.

CONSOLIDATED MFG. CO.,
TOLEDO, OHIO.

YELLOW AND ROCKINGHAM WARE.

IN OPEN STOCK.

All first selection, good body, hard glaze. Here offered at prices far below market.



Rockingham Bowls. Doz.
- 2⅜in, actual 2¼ in. .$0 41
- 3⅛ " 3 " .. 67
- 4⅛ " 4½ " .. 95
- 5 in. " 4¾ " .. 1 15
- 6 " 5¾ " .. 1 75

No. 1 Yellow Bed Pan. Doz. $4 25

Individual Teapot.

Rockingham Tea Pots—Doz.
Individual size .$1 05

Banded Yellow Bowls.
- 2⅜in. actual 2¼ in..... 88
- 3⅛ " 3 " 60
- 4⅛ " 3¾ " .. 60
- 5 in. " 4¾ " .. 1 10
- 6 " 5¾ " .. 1 75
- 7in. " 6¾ " .. 2 30

Yellow Chambers. Doz.
- 12in. open, diam. 7 in $0 94
- 9 " " 6 " .. 1 35
- 8 " " 5 " .. 1 25
- 12 in. covered 7 " .. 1 45
- 9 " " 6 " .. 1 05
- 8 " " 5 " .. 1 00

Rockingham Tea Pots.
- 36 in. Enamel shape .. 1 45
- 36 " " .. 1 60
- 24 " " .. 1 00

"SENSIBLE" YELLOW AND ROCKINGHAM ASSORTMENT.

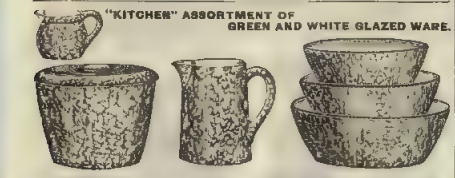
All large and useful pieces. You never saw better values for the money.

E747: First selection ware—good sizes—all items such as are used in every kitchen. Assortment consists of ½ doz. each:

- 1 8in. actual 9¼ in. deep Rockingham mixing bowl.
- 9 in. actual 9¾ in. Rockingham nappy.
- 4 5 in. teapot, capacity 2 pints.
- 3 6 in. yellow nappy, actual 6¼ in.
- 8 in., actual 9¼ in. deep fluted nappy, actual 9 in. banded yellow mixing bowl.
- 10¼ in. Total 3 doz. in pkg.

Per dozen, **92c**

"KITCHEN" ASSORTMENT OF GREEN AND WHITE GLAZED WARE.



E743—Cream white body, glazed inside and out, with green stippled decoration. Nipples are deep seal for milking bowls, milk pans, etc. Covered bowls have flat tight fitting covers so can be placed on top of each other. *Doz each* as follows:

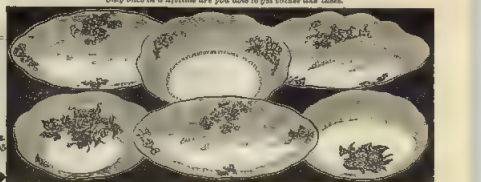
- Deep 6 in nappy
- 7 " " nappy
- 8 " " nappy
- ½ gallon jug
- ½ plint jug.
- 1 plint jug.
- 2½ plint jug
- 12 plint bowl with cover
- 3 plint bowl with cover.
- 4 plint bowl with cover.

Total of 14 pieces in set. 3 sets in bbl. Wt. 85 lbs.

Per set, **$1.30**

"SEMI-PORCELAIN" OFFERING EXTRAORDINARY.

Only once in a lifetime are you able to get values like these.



E754 Good class glaze, artistic shape, hand decorations such as large pink roses with green foliage and small pink and red roses with green foliage and bandtha, wild flower decorations in natural colors. A piece with heavy gold line. Asst. consists of the following:

- 1 ½ doz. Rim Soup bowls or nappies, average diam 9 in.
- 1 " Dishes or platters, average 11 in.
- 1 " Lot of 6 or 7 dishes, average 13 in.

Total 4 dozen.

Per dozen, **$1.45**

BROWN AND WHITE FIREPROOF COOKING WARE ASSORTMENT.

By a special arrangement, we have secured one lot of the celebrated brown and white Fireproof Cooking Ware which we offer at a practical 5 cent price.

E748. Genuine brown fireproof body with pure white inside glaze. Assortment consists of ¾ dozen each of the following 12 items.

- 4¼ in. large custard.
- 5¾ in individual custards.
- Large fancy casserole.
- 4⅜ in. handled cocotte.
- 8⅜ in handled cocottes.
- 6¼ in deep round bowl.
- 4¼ in. cocottes.
- 6⅜ in cocottes
- 4⅜ in. open bean pot.
- 3⅜ in. individual bean pot.
- 6⅜ in. pudding dish.
- 7⅜ in pudding dish.

Total 6 dozen in pkg.

Per dozen, **48c**

CUSPIDORS—In Original Packages.

E945, 40c Doz.

E946, 80c Doz.

E946—Diam. 7 in., ht. 4½ in. Rustic design in red green and olive colorings, half dull and half bright baked finish, artistic bronze decorations. Asstd 6 doz in crate. Doz. **80c**

E844 6¾ in. painted Lacquered spray decoration. Wt. 24 lbs. Doz. **80c**

E938—Large size, 6¾ in. Palmer body, embossed neatly glazed outside and in. Assd light and dark green, maroon, brown, yellow, etc. 4 doz. in crate. Wt. 150 lbs. Doz. **92c**

E838—Assd. Jardina. Coolings in dark green red and green with floral brown decorations in leaf and wreath design. Also decorations in assd. glazed inside with white enamel finish. 6 doz. in crate. Doz. **84c**

E838—Palmer body, embossed, heavily glazed inside and out. Asst'd colors, light and dark green, maroon, brown, yellow, etc. 4 doz. in crate. Wt. 150 lbs. Doz. **92c**

E833—Extra large, heavily embossed, in rich floral and scroll designs, in new and beautiful colors combination of red green, brown, etc. Asst'd 2 sizes, 6 and 7¾ in., 3 each to pkg. Total 1 doz in case, wt. 60 lbs. Doz., **$2.10**

IN OPEN STOCK.

E830, 1 doz. Doz. E831, $2.25 Doz.

E830, "Carnarion and Gold"—Large size, ht. 6¼ in., diam. of top 7¼ in., good shape well made, decorated in bold floral sprays of pink carnations and gold band around center and gold edge. Doz. **$2.25**

E831—Large size, ht. 4½ in., diam. at top 7¼ in., white semi-porcelain, rapid decoration on both sides of body and on flange, gold band and gold decorated edge.....Doz. **$2.25**

E847, $2.40 Doz. E811 $ .80 Doz.

E847—White granite bowl 7½ in diam. at top, 3¼ in. high, assd floral decorations in natural colors. Gold lined, large full shape. Doz. **$2.40**

E811—Large size, ht. 5¼ in., diam. of top 7¼ in., semi porcelain body, hand cobalt blue inside and out, heavy gilded ware embossed in tulip design, raised and outlined with gold wide gold band base, heavy gold classed edge. 1 doz in pkg..... Doz. **$2 80**

RARE DIME VALUE.

E832—Wt. 2 lbs., brown glazed inside and outside, white mottled and bristol white with embossed decorated sides. Large size, 7 in., ht. 4¼ in. 2½ doz. each. Total 4½ doz. in pkg. wt. 182 lbs.

Per dozen, **92c**

EXTRAORDINARY COMBINET OFFERING.

E775—White brilliant glazed ware, perfect shape, neatly embossed with fancy handle. Colored glazed wreath in the center and white enamel with ball and handle. Pail holds 12 inches diameter 10 inches high.

Doz. **$5.00**

"ROSE" DECORATED EWER AND BASIN.

E951—Extra large, new pattern ewer, fancy handle, large spout, large size basin. Good quality semi-porcelain. Decorated in rose design, of pink roses and buds with a touch of red, effectively shaded, green sprays. Per set, **92c**

BLUE TINTED COMBINET.

E776—Large size, footed with cover and heavy wire bail with enameled wood handle, full 14 in in heavy earthenware body, embossed in fancy over all pattern, glazed Doz. **$5.20**

brown and pearl blends, large handle, set of three in a nest, brazil ornaments 3 styles, 1 doz. each, total 3 doz. in case, wt. 140 lbs. ..... Doz. 95c

JARDINIERES IN ASSORTMENTS.

10 CENT WINNERS.

E3632—Hard burned painted body, baked red and green colorings with fancy embossed fluid decorations. Five assorted patterns. Average diam. about 8¼, ht. about 6¼, all full shapes and patterns. ¼ doz. each of 6 styles. Total 1½ doz. in pkg.
Per dozen. **95c**

E3650 Best faïence hearty embossed in artistic assortment, mixed colors Right and dark green, ivory and brown. Have 1 doz. each of 5¾ and 6¾ in. and 2 doz. in centers. Wt. 115 lbs. Doz. **86c**

...up to dark shapes. 7¾ ... assorted ...

...d floral decorations. Te... ...ornations. Assorted colors ... and ...
...Wt. abt. **96c**

E3648—Best faïence body ... embossed designs in green and brown and gray and light ... tinting. Light green and dark plate ... 2 each of 3 styles. Average ... 7¾ in., ht. 6¾, circum 23 in. ... doz in pkg., no pkg. charge. **$1.95**

E3649 Good faïence body, rich blended dark green and brown colorings outside, green glazed inside. Asst. consists of ¼ doz. each ... doz. in., diam. 8½ in. ... doz. 9 in. diam. ... Total 1 doz. in pkg. ... pkg. charge. Doz. **$1.95**

E3659 Faïence body, large fancy shapes, heavily embossed, with handle, outside with rich blended tinted ground work, each in light and dark greens blending into ... shades, ... inside ... decorated edges. Asst. comprises ...

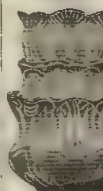
1 doz. ... decoration ... $0 96
... 1 44
... 1 92
... 2 40
... rose ... 1 35

Total for asst. **$4.20**

6in asst., wt. 50 lbs.

E4960—Beautiful ... consisting of ... Extensive ... designs, all ... stone, leaves and flowers hand colored.
3 only 7 in. ... @ 51c .. $1 53
... 5 in. ... 2 15
... 10 in. ... 1 98
Total **$5.66**
wt. 10 lbs

E3655—Hard burned ... body ... boxwood wood ... deep ... Assorted ... green and ...
1 doz. 5¾ in. diam., ... ht. $0 70
1 doz. 7¾ in. ... diam. 1 10
1 doz. ... dip ... diam. ... ht. 1 75
Total ... wt. **$3.64**



E3658 ... under the raised ... dipped ... fancy ... green ... assorted ... Large ... package ... diam. ... at 30c (60)
... 6¾ in. diam. 10, ht. 8¾, ... 30c (60)
... 2 only 10 in., diam. 12¾, ht. 9¾, ... circumference 30, at 45c (90)
... at 17c (34)

Total for asst. **$1.85**

E3656 "Matt Green" ... white body, ... mixed in the new matt green ... white ... dull gaze finish. Each nest ... pieces of ...
1–5¾ x 2¾ ...
1–6¾ x 3 ...
1–7¾ x 3¾ ...
1–8¾ x 3¾ ...
nested.
Total ... ½ by charge. Each **82c**

JARDINIERES AND PEDESTALS

E4040 "Home Beautiful" ... art decorations and colorings ... dark rich brown, with stippled gold and pink and green ... combination, ... one green and brown lined ... dark brown ... with, and decorated rose design ... over all about 12 in. diam. bodies ... glazed inside, embossed and glazed outside. 1 each of four patterns. Total 4 in pkg. Ea. **35c**

(NO PKG. CHARGE.)

E3687, "Blended"—9 in. ... Ivy ... pedestal full ht. ... fancy embossed pedestal with ... jardinieres with ... scalloped ... both pieces in rich dark ... 3 in pkg. wt. 75 lbs.
(NO PKG. CHARGE.) Each **$1.20**

E4064 "Artistic ... and ... shapes, 11¾ ... ht. pedestal 18, ... shade in combination ... making very striking decoration. Each **$1.80**

No Package Charge
No Cartage Charge

JARDINIERES AND PEDESTALS—Continued.

Ea. 6 lbs.

E3805, Extra Large Glazed Embossed—Jardiniere 9 x 9¼, girth 36. Pedestal 15 ... of jardiniere and pedestal 38¼ ... embossed in ... dark green ... Each **$1.95**

E4575 "Wedding Gift" ... Best faïence body, ... Washington's head with wreath ... Size of jardiniere diam. ... 40lbs. Pedestal 14, 18¼ in. total ... Each **$4.95**

NO PKG. CHARGE.

"ROOKWOOD BLEND" JARDINIERE AND PEDESTAL.

...ot ... rock-wood finish, with ... ily decoration in ... ors and light ... ...-coloring ... with ... ...

E3846 Best ... ence body, rock wood finish, with lily decoration in ... ors and light ... ...-coloring ... with ... ...
In pkg. wt. ... lbs. Each **$1.95**

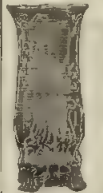
UMBRELLA STANDS

Ea. 9 lbs.

E3536—Best faïence body, large full shape 8 in. ... 17 in. high, beautifully ... with ... and ... decorations, with ... and ... and buttons, rich ... blends. 3 in pkg. ... Ea. **74c**

E3938—Large size, 10¼ in., ... high ... lapped edge, richly ... tropical scenes ... garnish of brown shading and ... heavily plated ... wt. 35 lbs. Each **$1.25**

(NO PKG. CHARGE.)



Ea. 6 lbs. Each. Ea. 9 lbs. Each.

E642 "Rosewood Blend"—Good grade faïence body at 25¢ in. diam. at top 10 beautiful combination of green and rosewood blended finish, embossed with complete rope, vine, and colonial design. Each stand has 4 feet. Each **$1.05**

E943—Best faïence body richly embossed top and bottom with plain body, new shade rosewood finish, full ht. 32 in. diam. at top 11 circum. about 35. Each in pkg. **NO PKG. CHARGE.** Each **$3.95**

EMBOSSED GLAZED FERN DISHES.

E784—Diam. 7¼ in., deep shape, fancy embossed Tuscan body in light and dark green blended ... glazed inside and out. Inside perforated clay, fern set. Doz. **$2.15**
E795 ... Doz. **$3.75**

MATT GREEN FERN DISH.

E794 ... plain ... matt green finish inside and out with ... fine ... ...in. diam. ... (Open stock ...
Each **42c**

NEW RED CLAY FLOWER POT ASST.

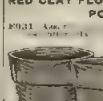
Terra Cotta Color.

E3830 All mold made and ... grade of pot ... very popular. Asst. contains ... quantities of 3 patterns ... each size in seven colors ... red pots ...

...	$0 18	$0 90
...	24	1 44
...	36	2 16
...	48	2 76
...	72	4 32

Total for asst. **$11.44**
Total of 8 doz. in crate, wt. 277 lbs. only in crate

RED CLAY FLOWER POT ASSORTMENT.



E3911 ... $0 75
... 1 05
... 1 80
Total, 7¾ ... doz. ...
Total for ... asst. **$3.60**
$0.90 ...

PAINTED FLOWER POT AND SAUCER ASSORTMENT.

E3933—Bright red ... pots with ... wide band of gold ... handle covering ... the entire ... Assorted ... comprises ...

...	$0 24
1 doz. ...	16
1 doz. ...	80
...	53
...	74

Total 4 doz. in crate, **$2.85**
Sold in crate only Wt. 156 lbs.

FLOWER POT AND SAUCER ASST.

Terra Cotta Brown.

E3932—Mold made hand finished. Made from best pottery clay, assorted patterns. Complete with saucers. Assortment contains ...

1 ...	...	$ 06
...	...	08
...	...	09
...	...	12
...	...	75

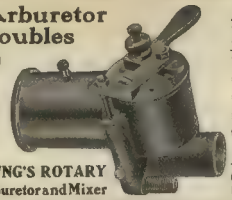
Total for asst. **$2 94**
Wt. 300 lbs **(NO PKG. CHARGE.)**

The Death of the Package Charge.

For many years the package charge on glassware, crockery etc., had been a matter of contention among bakers, jobbers and retailers. This spring we took the bull by the horns and abolished the charge in its entirety. Our terms are and will continue to be **"No package charge on any goods."**

Carburetor Troubles

Vanish Into Thin Air When You Use



YOUNG'S ROTARY Carburetor and Mixer

A Little Device with a Big Record for Saving

We have three very important points of superiority over all other carburetors made.

1. We use no float feed. You cannot flood your engine if you try.
2. We can run your Auto five miles farther on one gallon of gasoline than any other carburetor made.
3. We overcome the annoyance of sooted plugs

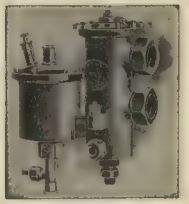
We forfeit the price of the carburetor and $50 in addition for every case where we fail to make good our claims. Patented in all countries. Write to-day for descriptive booklet and prices.

CULVER NOVELTY COMPANY
Patentees and Manufacturers CULVER, IND., U. S. A.

Walker Carburetor

The only carburetor which can be adjusted to positively give any desired ratio of gasoline to air throughout the throttling movement.

B. F. WALKER
BRIDGEPORT, CONN.



THE IMPROVED AND SELF-REGULATING LONGUMARE CARBURETOR

REASONABLE AND PRACTICABLE

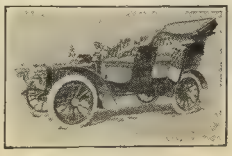
The Longumare Carburetor has been for the last nine years the Standard Carburetor of the World. Nearly every present day carburetor is an imitation of the principles of the Longumare Carburetor.

Why spend your money on experimental carburetors when you can buy one which has proven its value by nine years practical usage. We should be pleased to correspond with you.

BRADFORD MOTOR WORKS
Sole Licensed manufacturers in the United States of the Longumare Carburetor.
BRADFORD, PA.

JOHN MOORE, MANAGER

PHONES { KEYSTONE RACE 47-64 A. BELL WALNUT 64-59 A.
RESIDENCE PHONE WALNUT 18-69 A.



10-1906-30 H. P. AUTOMOBILES TO HIRE

Orders Taken at all the Leading Hotels

THE AUTO MAINTENANCE COMPANY
BROAD AND ELLSWORTH STS., PHILA.

Agents for "Upton Automobile"
Perfectly Simple and Simply Perfect
Storage and Repairs
A Postal will bring the Machine to Your Door
Visitors to Philadelphia will receive prompt attention.

VISES.

BONNEY'S PATENT VISES.

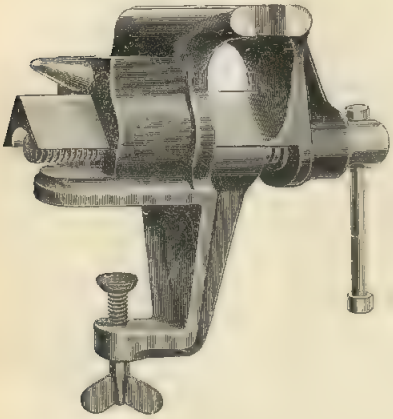
In Sets.

Sample Stand and one dozen Vises packed in one box, as follows —

		Size	Weight	Each
No. 1.	Iron jaws	1½ in.	1¼ lbs.	$ .31
No. 1½	Iron jaws	1¾ in.	1½ lbs.	.42
No. 2.	Iron jaws	2 in.	2 lbs.	.54
No 2½	Steel jaws	2 in	2½ lbs.	.81
No. 3.	Steel jaws and swivel jaw	2¼ in.	2¾ lbs.	1.00
No. 3½	Iron jaws	2¼ in.	2¾ lbs.	.71
No. 4.	Iron jaws	2¾ in.	5 lbs.	1.37
No. 5.	Swivel jaws	2¾ in.	5 lbs.	1.63
No. 6.	Steel jaws	2¾ in.	5 lbs.	1.63
No. 7.	Steel jaws and swivel jaw	2¾ in.	5 lbs.	1.87
No. 8.	Steel jaws	2¾ in.	5 lbs	1.63
No. 9.	Steel jaws and swivel jaw	2¾ in.	5 lbs.	1.87
	Sample Stand, length 28 inches			1.21
				$15.00

The vise screws of the above vises are made from steel castings, head and collar in one solid piece, and will not break, wear out, or pull off. Thumb screws are made from malleable iron. Both screws are machine threaded, not cast. All parts are interchangeable

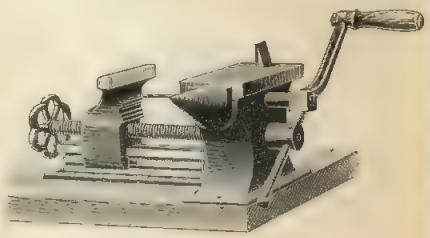
CHAMPION VISE.



Cut of No 118 Half size
Covered screw Excellent quality Superior finish
With clamp.

	Size of Jaw	Weight, each	Per doz
No. 118.	2½ inch steel front jaw	3¾ lbs.	$18.00

THE GIPSY VISE.



The Gypsy combines four different tools: anvil, straight vise, pipe vise and drill press. Weighs 55 lbs The anvil is 7 inches high and 12 inches long, with 4 inch face; vise jaw 5½ inches wide and opens to 8 inches. The drill spindle is made for square shank drills. The spindle can be slipped out of its bearings and laid by when not using the drill.

The Gypsy Vise is intended for farmers, will not cost more than one single tool if bought separate

Each . . . . . $

For Those Who Love Music
The ANGELUS

When we say that with the ANGELUS, only a *lobe* of music is necessary for *your* full enjoyment of all music, we mean just that—all limitations to a complete indulgence of your love for music end with possession of the Great ANGELUS.

To you, musician or non-musician, we say your limitations end—because your fingers, whether trained or untrained, are supplied with every adequate means of rendering all music.

The *PHRASING LEVER* gives you complete mastery of every delicate shading of tempo. The *DIAPHRAGM PNEUMATICS* endow you with the "Human Touch" of the ANGELUS. The *MELODY BUTTONS,* which with the Phrasing Lever are exclusive with the ANGELUS, enable you to accentuate the melody in bass or treble, the same as in band-playing. These three features, indispensable to a musically correct performance, originated with us and are reserved, by the patent laws, for exclusive installation in the ANGELUS.

Logically the ANGELUS is the piano-player entitled to receive first consideration by every intending purchaser. The ANGELUS is made either in cabinet form or installed within the case of a high-grade piano, making the Emerson-Angelus or the Knabe-Angelus.

Purchased by Royalty and the World's Greatest Musicians. Descriptive literature upon request.

Established 1876. THE WILCOX & WHITE CO., MERIDEN, CONN.

DEFEAT
1896
1900

Only Trans-Pacific Travellers who have crossed by the different routes can fully appreciate the very great advantages of the route of the

PACIFIC MAIL S.S.CO.

It follows the Sunshine Belt via beautiful Hawaii, where twelve daylight hours may be enchantingly spent in sight seeing

From the New York Herald, January 7th, 1906

Stretching completely across the Pacific is what may be termed the "Sunshine Belt." Here the sun shines regularly, the trade winds blow gently, there is very little rain and the seas are never high. It is within this belt that the Hawaiian Islands are located, with their equable climate and subtropical verdure.

North of this the Pacific presents much the same aspect as the Atlantic, with its cold winds, fog and blows, except that the icebergs of the North Atlantic are lacking

SERVICE NOT AFFECTED BY THE SAN FRANCISCO DISASTER

Travellers can find Hotel accommodations convenient to San Francisco, or may occupy their rooms aboard the steamers while in port, from which may be visited the greatest ruins of the age.

From San Francisco to Hawaii, Japan, China and the Philippines

Rates and information at any railroad ticket agent or from

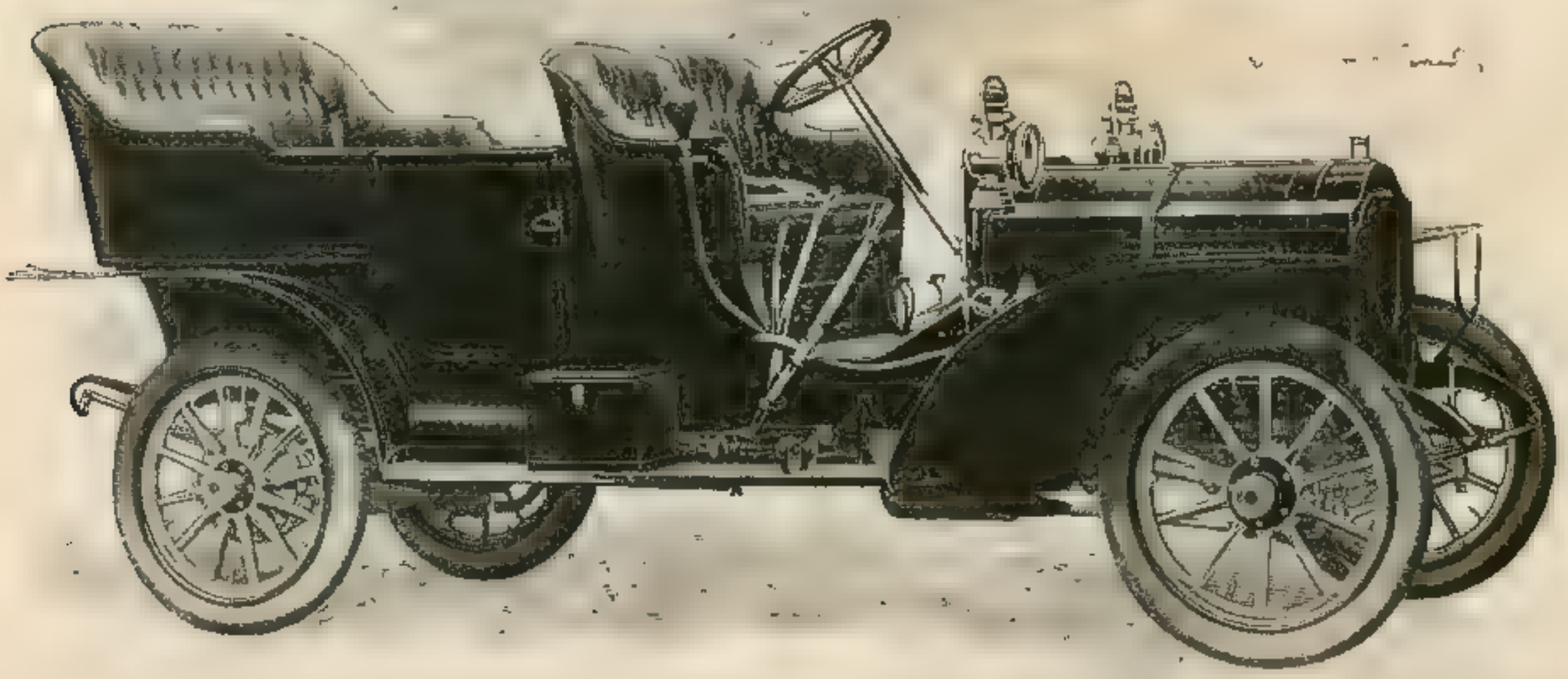
PACIFIC MAIL S. S. CO., SAN FRANCISCO, CAL.

CHICAGO, 120 Jackson Boul. NEW YORK, 1 B'way—349 B'way ST. LOUIS, 903 Olive Street BALTIMORE, Baltimore and Hanover
BOSTON, 170 Washington St. PHILADELPHIA, 632 Chestnut St. SYRACUSE, 212 W. Washington St. WASHINGTON, 511 Pennsylvania Ave.
HAMBURG (GERMANY), Amerika Haus, Ferdinand Strasse LONDON (ENGLAND), 43 Leadenhall Street

R. P. SCHWERIN, Vice-President and General Manager

Packard

MOUNT VERNON



Through ten years of consistent progress can be traced the unwavering pursuit of Perfection to its culmination in the

"Packard 30"

An American Product Worthy of America

Price (in standard colors and equipment) - - $4,200 f. o. b. Factory

Special Colors, Upholstery and Equipment, Extra.

Packard Motor Car Co., Dept. D

Detroit, Mich.

Member Association
Licensed Automobile Manufacturers

New York Branch
1540 Broadway

606 miles of Michigan's sandy roads in less than one day with absolutely no repair, adjustment or replacement except one tire is the world's record established by the 1907 Packard on May 31st.

THE RECORD

LEFT	ARRIVED	ELAPSED TIME	RUNNING TIME
Detroit 12 Midnight	Chicago 11.00 A. M.	11 hrs.	10 hrs. 13 min. 40 sec.
Chicago 12 Noon	Detroit 10.50 P. M.	10 50	10 hrs. 22 min.
		21 50	20 hrs. 35 min. 40 sec.

Note the wonderfully consistent running. The elapsed and running times in each direction vary only ten minutes and nine minutes respectively on the two runs of 303 miles each. The average speed maintained throughout the entire 606 miles is approximately 30 miles per hour.

Price (in standard colors and equipment) - - $4,200 f. o. b. Factory

Special colors, Upholstery and Equipment, Extra.

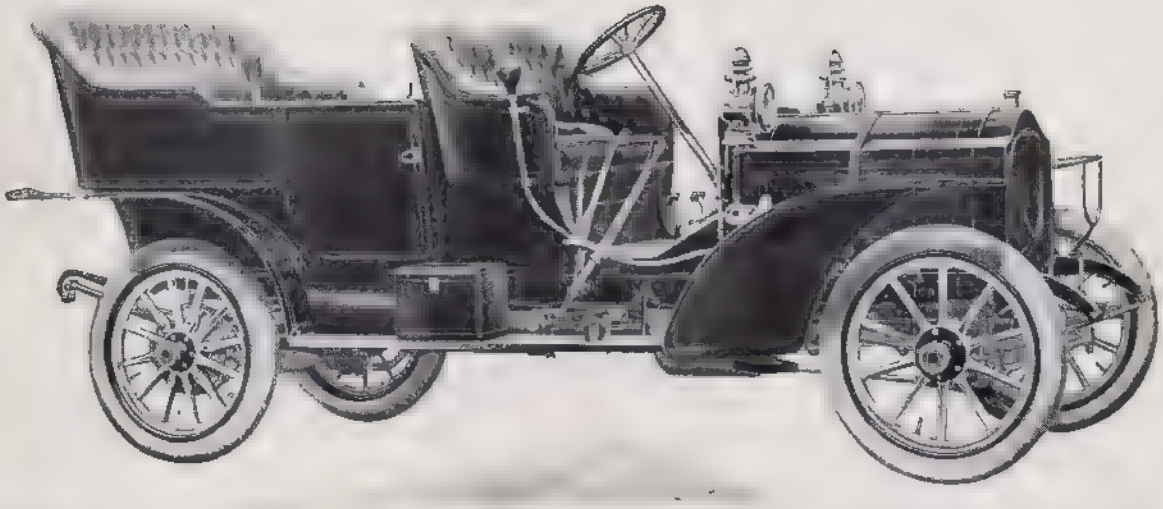
Packard Motor Car Co., Dept. O.

Member Association Licensed Automobile Manufacturers

Detroit, Mich.

New York Branch 1540 Broadway

Packard



Before a single "Packard 30" was delivered four cars were driven 50,000 miles including the Detroit-Chicago-Detroit run of 606 miles in 20½ hours and the work of the Glidden Tour patrol car.

A "Packard 30" acted as patrol car in the Glidden Tour and each day covered more than twice the mileage of the regular contestants under exactly the same road conditions but carrying from five to eight people.

Price (in standard colors and equipment) - - $4,200 f. o. b. Factory
Special colors, Upholstery and Equipment, Extra.

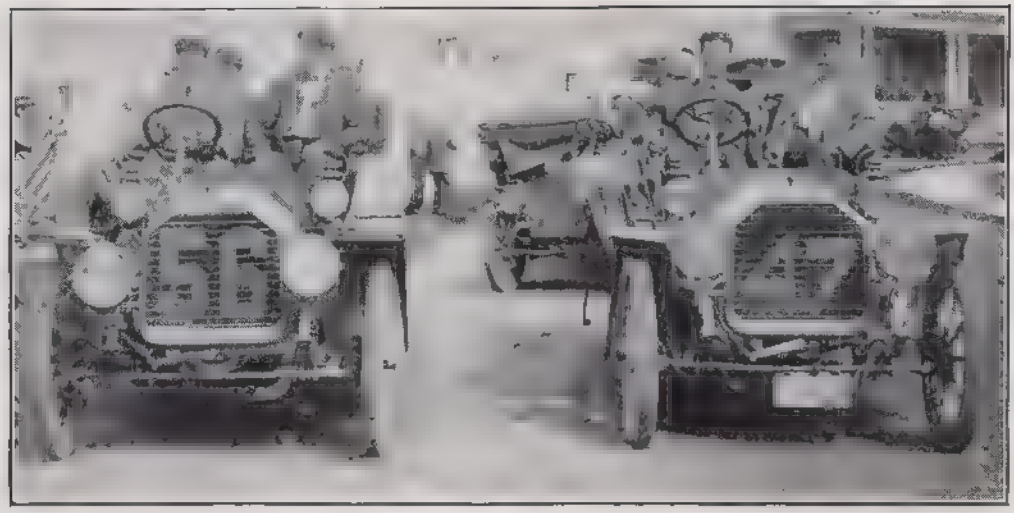
Packard Motor Car Co., Dept. O

Member Association Liscensed Automobile Manufacturers

Detroit, Mich.

New York Branch 1540 Broadway

Peerless



Perfect Score 30 H. P. Peerless Touring Car
Driven Successfully on Glidden Tour.

Twelve Hundred Miles Without Adjustment

This is the record of Model 14, the 1906 Model of Peerless touring car. No replacements or adjustments made while running on schedule time between controls. Passengers did not alight from car for any repairs or any reason whatever between controls. Each control reached ahead of schedule time. Average running time of last day's run of 124 miles was 20 miles an hour. Examined by experts at close of contest was declared to be in perfect running condition.

The Peerless Models for 1907, Models 15 and 16, contain all the best features of the 1906 Model, as well as many improvements to make the car the acme of perfection for the person who wants a touring car capable of speed up to fifty miles an hour, and to climb hills with ease on high gear with four or five passengers. Chrome nickel steel and drop frame used in construction.

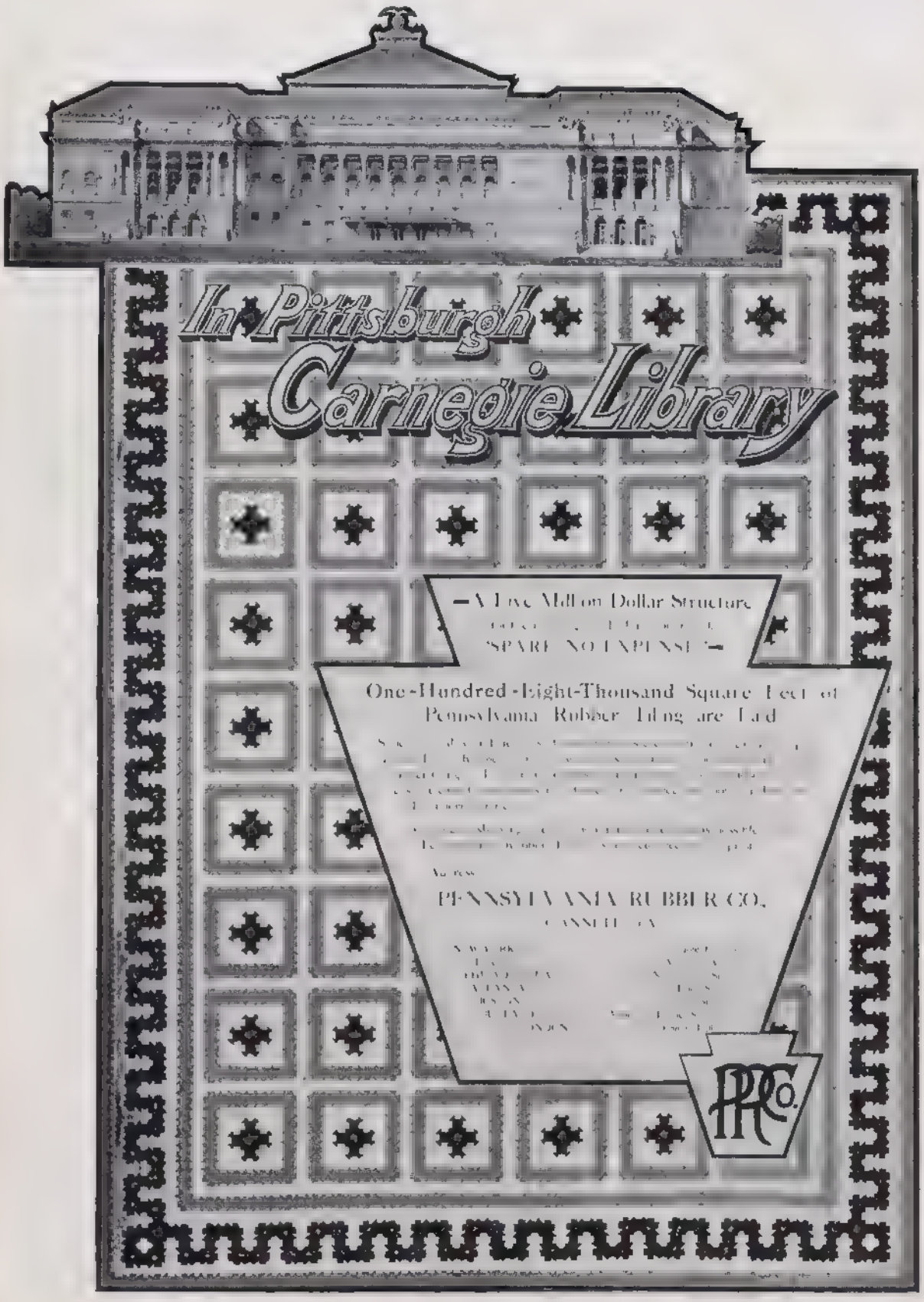
1907 Models

Model 15—$5,000 ***Model 16—$4,000***

A demonstration will convince you of the simplicity and dependability of the Peerless direct drive touring car. Full information will gladly be sent to you on request.

THE PEERLESS MOTOR CAR CO., 35 Lisbon St., Cleveland, Ohio

Member A. L. A. M.


In Pittsburgh
Carnegie Library
—A Five Million Dollar Structure
SPARE NO EXPENSE—
One-Hundred-Eight-Thousand Square Feet of
Pennsylvania Rubber Tiling are Laid
PENNSYLVANIA RUBBER CO.
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HENDERSON'S BULBS FOR AUTUMN PLANTING

Superior Quality!

LARGEST AND BEST FLOWERING BULBS

We Import no Low Priced "Seconds."

Greatest Assortment of Bulbs in America!

Standard Varieties and Many Grand Novelties
in
HYACINTHS, TULIPS, DAFFODILS, LILIES, PÆONIAS,
IRIS, AND A HOST OF OTHER KINDS OF BULBS

TO FLOWER IN THE HOUSE THIS WINTER
OR IN THE GARDEN NEXT SPRING

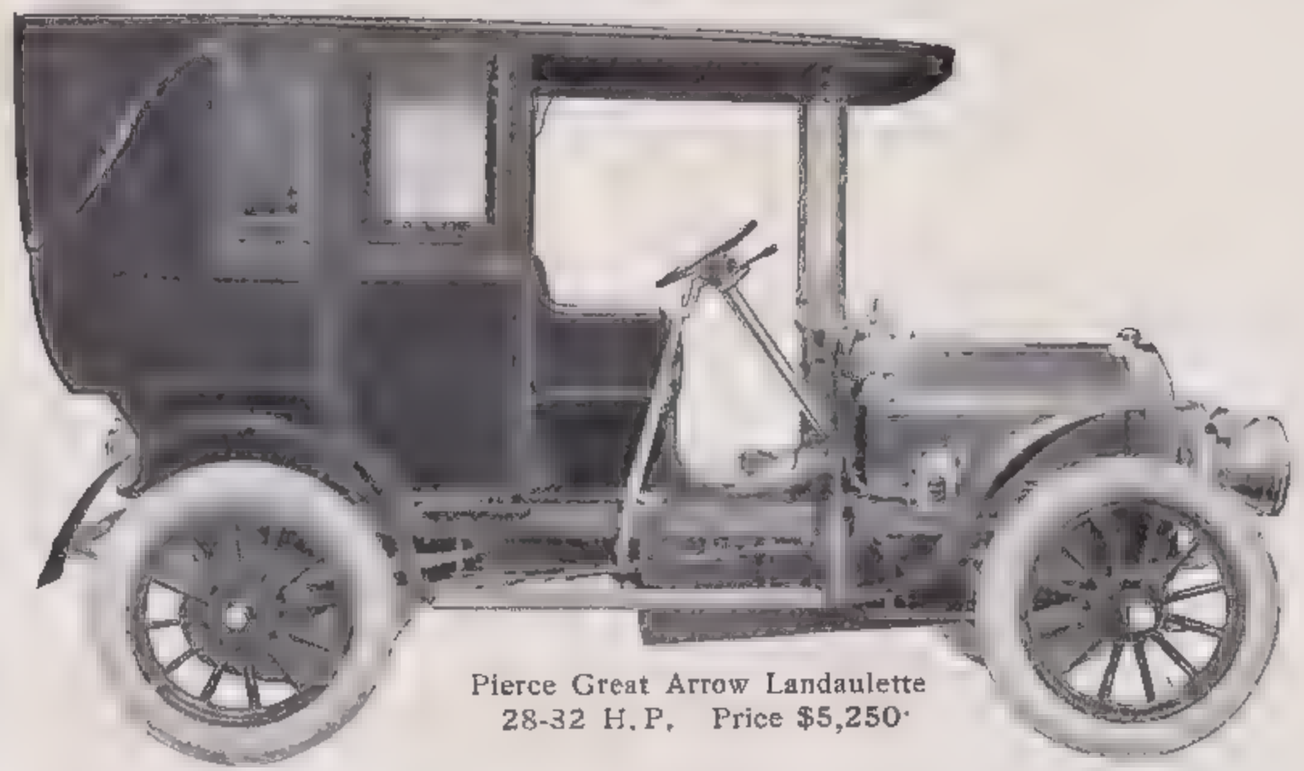
Henderson's Autumn Catalogue

Most Complete and Beautiful —Bulbs, Plants,
Seeds, etc., for Fall Planting.
We Mail it FREE

To applicants mentioning Country Life in America.

PETER HENDERSON & CO., 35 and 37 CORTLANDT ST., NEW YORK.

Pierce Great Arrow Enclosed Cars



Pierce Great Arrow Landaulette
28-32 H.P. Price $5,250

These cars, while perfectly designed to suit all conditions for which a city or suburban carriage is used, are equally well adapted to the needs of the tourist. Our 1906 1907 models include two types—Suburban and Landaulette. Each is fitted with the Pierce mechanism—safe, easily controlled, quiet and powerful. Each is distinguished for its beauty of outline, spacious, comfortable seating capacity and luxurious appointments.

These cars represent our best thought and best effort. They are fully equal to every demand under all conditions at all times.

These enclosed bodies are interchangeable with the side entrance tonneau car bodies of the 1906 type.

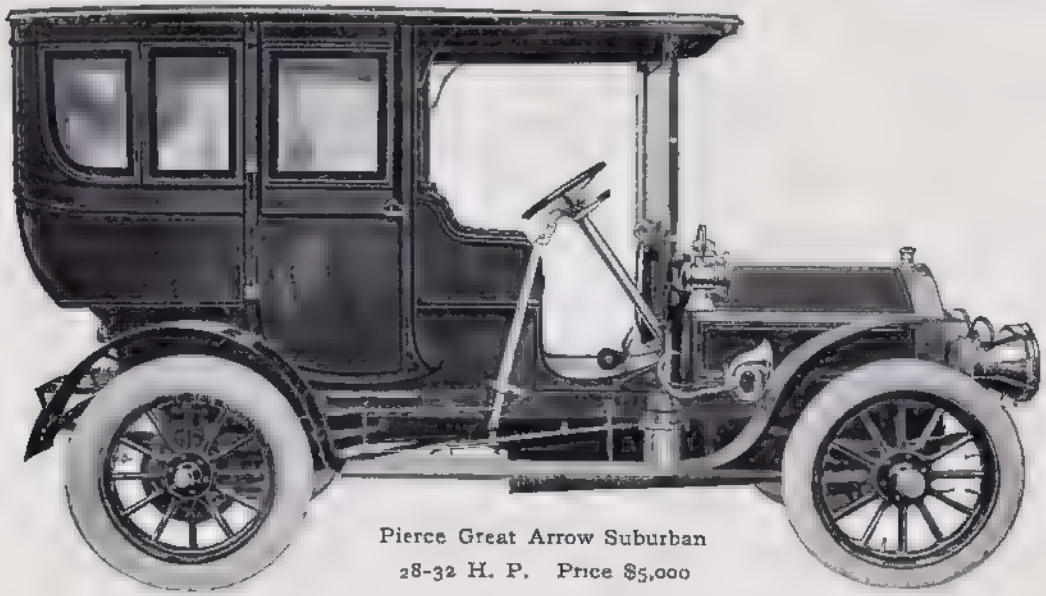
They can be seen and examined at any Pierce distributing branch. Write for descriptive literature—technical and otherwise.

THE GEORGE N. PIERCE COMPANY, BUFFALO, N. Y.
Members of Association Licensed Automobile Manufacturers

PIERCE DEALERS

Boston, Mass. - - J. W Maguire Co., 745 Boylston Street
Chicago, Ill. - - H. Paulman & Co., 1321 Michigan Avenue
New York, N. Y. - Harrolds Motor Car Co., Broadway and 58-59th Sts.
Pittsburgh, Pa. - Barker Bros Co., Baum and Beatty Streets
Baltimore Md. - Southern Auto. Co, 2021 Maryland Avenue
Buffalo, N. Y. - - The George N. Pierce Co., 752 Main Street (Retail)
Cincinnati, O. - - D. T Williams Valve Co
Detroit, Mich. - - J. P. Schneider, 189 Jefferson Avenue
Denver, Col. - - The George N. Pierce Co., 1643 California Street
Geneva, N Y - - J. A. Place
Hartford, Conn. - The Miner Garage Co., 120 Allyn Street
Houston, Texas - Hawkins Auto. and Gas Engine Co
Kansas City, Mo. - E. P. Moriarty & Co, 1612 Grand Avenue
Los Angeles, Cal. - Bush & Shields, 953 South Main Street
Louisville, Ky. - - The Zorn-Strauss Co, Inc, 518 Third Avenue
Milwaukee, Wis. - Hubbard Automobile Co., 187 Wisconsin Street
Ottawa, Canada - Wilson & Co, 142 Bank St
Oakland, Cal. - - The George N. Pierce Co, 1014 Clay St (Wholesale)
Philadelphia, Pa. - Foss-Hughes Motor Car Co., 201 N Broad Street
Portland, Me. - - J. A. Dowling, 22 Forest Ave.
Portland, Ore. - - Covey & Cook Automobile Co., 16th and Alder Streets
Providence R. I. - The Shepard Company
Rochester, N. Y. - U. S. Automobile Co., 21 Plymouth Avenue
San Francisco, Cal. Mobile Carriage Co, Golden Gate Ave. and Gough St
Scranton, Pa - - Standard Motor Car Co
Springfield, Mass. - E. R. Clark Auto. Co., 117 Lyman Street
Syracuse, N Y. - Amos-Pierce Auto. Co, 109 S State Street
St Louis, Mo. - - Western Auto. Co, 4721 Washington Boulevard
St. Paul, Minn. - C. P Joy Auto. Co, 465 Minnesota Street
Titusville, Pa. - - A E. Lambert
Toronto, Ont. - - Auto. and Supply Co, Ltd, 24 Temperance Street
Troy, N. Y. - - - Troy Auto Exchange, 22 Fourth Street
Utica, N. Y. - - Utica Motor Car Co

The Pierce Great Arrow Enclosed Cars



Pierce Great Arrow Suburban
28-32 H. P. Price $5,000

This car, the Pierce Suburban, combines in itself the practicability of the Pierce Great Arrow Gasoline Touring Car together with the social utility of an enclosed city carriage. This offers in the form of a high-class car, two cars for widely different purposes. The service secured for each purpose is perfect, while the cost is reduced to that of a single car.

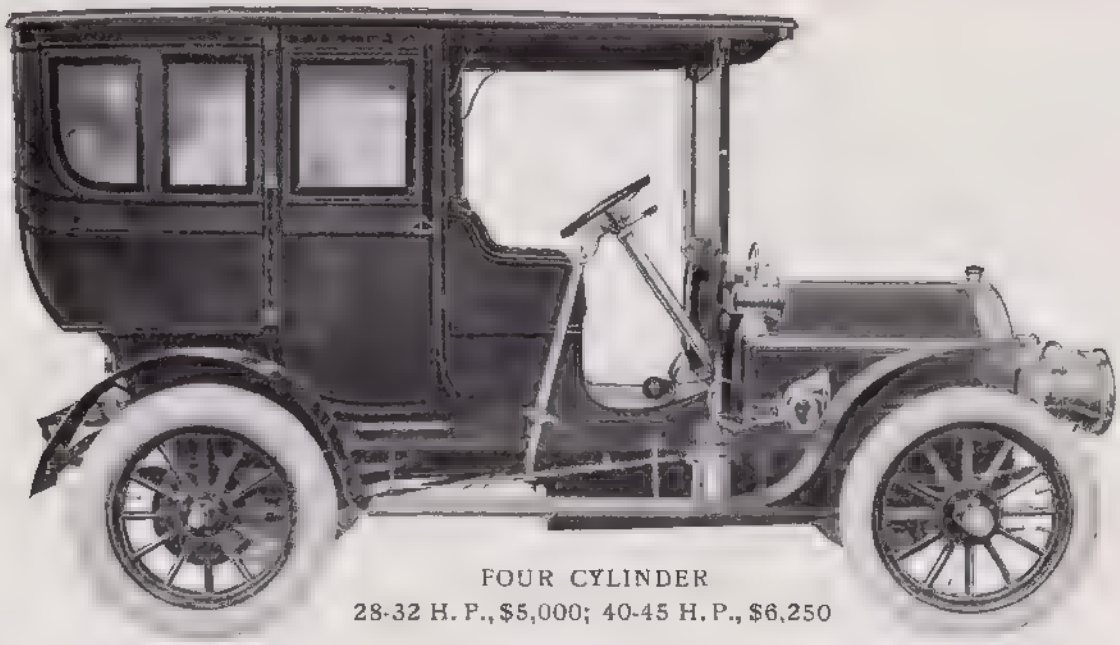
THE GEORGE N. PIERCE COMPANY
BUFFALO, N. Y.

Members Association Licensed Automobile Manufacturers

PIERCE DEALERS

Boston, Mass.	- J. W. Maguire Co., 745 Boylston Street
Chicago, Ill.	- H. Paulman & Co., 1321 Michigan Avenue
New York, N. Y.	- Harroda Motor Car Co., Broadway and 58-59th Sts.
Pittsburgh, Pa.	- Barker Bros. Co., Baum and Beatty Streets
Baltimore, Md.	- Southern Auto. Co., 2021 Maryland Avenue
Buffalo, N. Y.	- The George N. Pierce Co., 752 Main Street (Retail)
Cincinnati, O.	- D. T. Williams Valve Co.
Detroit, Mich.	- J. P. Schneider, 189 Jefferson Avenue
Denver, Col.	- The George N. Pierce Co., 1643 California Street
Geneva, N. Y.	- J. A. Place
Hartford, Conn.	- The Miner Garage Co., 120 Alvin Street
Houston, Texas	- Hawkins Auto and Gas Engine Co.
Kansas City, Mo.	- E. P. Moriarty & Co., 1612 Grand Avenue
Los Angeles, Cal.	- Bush & Shields, 953 South Main Street
Louisville, Ky.	- The Zorn-Strauss Co., Inc., 518 Third Avenue
Milwaukee, Wis.	- Hubbard Automobile Co. 187 Wisconsin Street
Ottawa, Canada	- Wilson & Co., 142 Bank St.
Oakland, Cal.	- The George N. Pierce Co., 1013 Clay St. Wholesale
Philadelphia, Pa.	- Foss-Hughes Motor Car Co., 201 N. Broad Street
Portland, Me.	- J. A. Dowling, 22 Forest Ave.
Portland, Ore.	- Covey & Cook Automobile Co. 18th and Ader Streets
Providence, R. I.	- The Shepard Company
Rochester, N. Y.	- U. S. Automobile Co. 21 Plymouth Avenue
San Francisco, Cal.	- Mobley Carriage Co. Golden Gate Ave. and Gough St.
Scranton, Pa.	- Standard Motor Car Co.
Springfield, Mass.	- E. R. Clark Auto Co. 117 Lyman Street
Syracuse, N. Y.	- Amos-Pierce Auto Co. 109 S. State Street
St. Louis, Mo.	- Western Auto Co. 4701 Washington Boulevard
St. Paul, Minn.	- C. P. Joy Auto Co. 368 Minnesota Street
Uniontown, Pa.	- A. E. Lambert
Toronto, Ont.	- Auto. and Supply Co., Ltd., 24 Temperance Street
Troy, N. Y.	- Troy Auto Exchange, 22 Fourth Street
Utica, N. Y.	- Utica Motor Car Co.

The Pierce Great Arrow Suburban



FOUR CYLINDER
28-32 H. P., $5,000; 40-45 H. P., $6,250

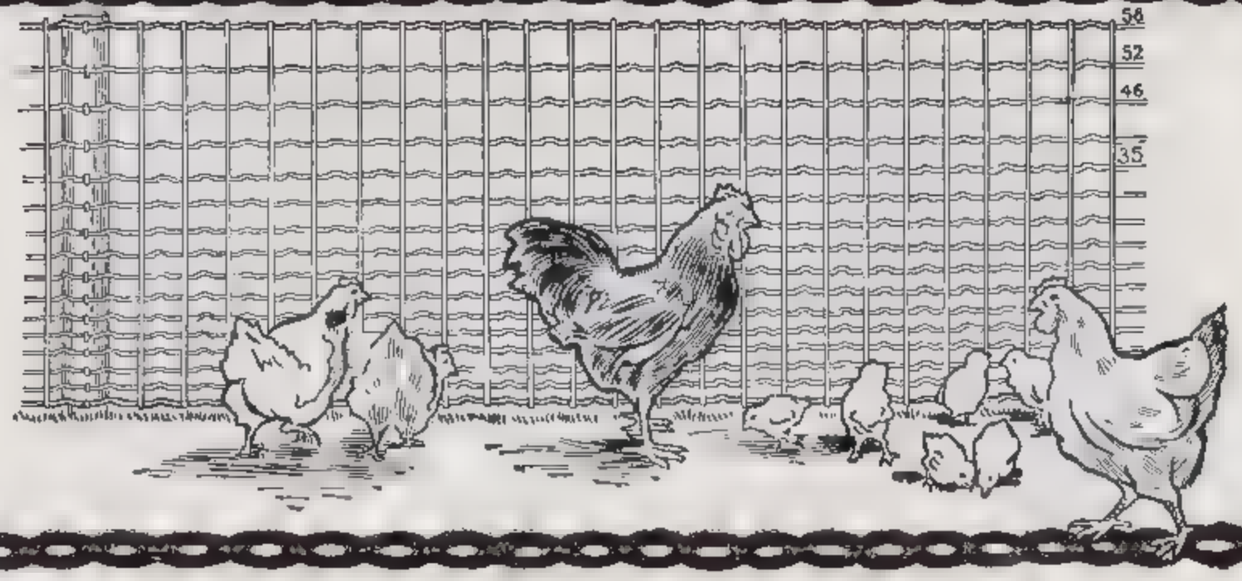
THE PIERCE SUBURBAN is a development of the Pierce Arrow. In the Chassis of the Pierce Arrow, American conditions for successful automobile construction were intelligently grasped and competently met. The result was a touring car for American men to be driven over American roads a greater number of miles with fewer adjustments and repairs than any other car.

The Pierce Suburban is the Pierce Great Arrow Chassis with enclosed body. This car meets the dual want of the average American car-owner—a dependable touring car and a luxurious city carriage in one and the same automobile.

THE GEORGE N. PIERCE COMPANY, BUFFALO, N. Y.

Members of Association of Licensed Automobile Manufacturers

What's this We're up Against?



At Last a Perfect Poultry Fence

The "Pittsburgh Perfect" Poultry and Garden Fence is exactly what its name indicates. It is "Perfect" because made of special steel of our own formula; "Perfect" because heavily galvanized, thus preventing rust; "Perfect" because our electric welding process makes stay and strand wires one piece so that mesh cannot spread to let fowl through; "Perfect" because smallest wires in it are heavier than the wires used by most fence manufacturers for a regular stock fence; "Perfect" because it is the only fence that will not unravel if strand or stay wire is cut.

Don't buy flimsey hexagon poultry nettings, they rust out quickly, won't stand up, and are but makeshifts and disappointments at best. It's "the WELD that HELD" that makes a perfect poultry fence. No top or bottom board needed. Heavy top and bottom wires take their place. Nothing can get through—nothing from the small chick to a mad bull.

THE ONLY ABSOLUTELY "PERFECT" POULTRY FENCE ON THE MARKET

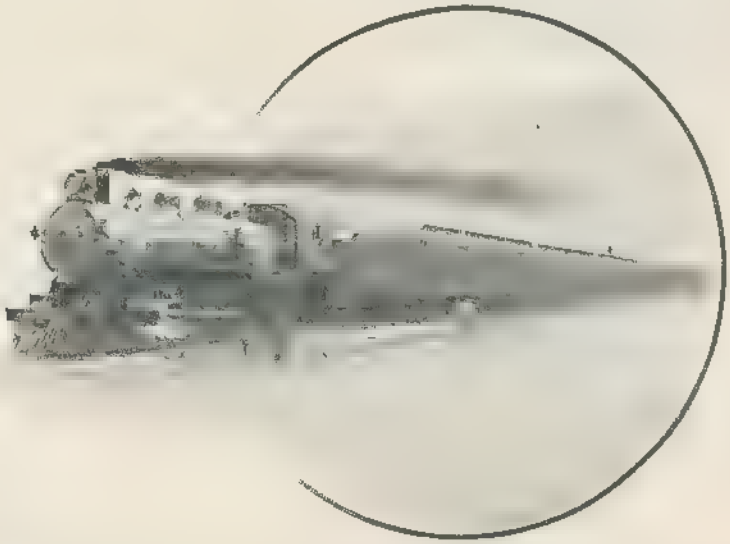
The price is small—the satisfaction is great.

Thousands of dealers handle the "PITTSBURGH PERFECT" FENCES, from the Extra Heavy Fences for stock to the king of all Poultry Fences.

THE "PITTSBURGH PERFECT" POULTRY FENCE. Has Your dealer got it? If not, write us for catalogue.

Pittsburgh Steel Company, Pittsburgh, Pa.

The Pittsburgh & Lake Erie Railroad



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6 Hours

EVERY DAY IN THE YEAR

The "Buffalo Limited" leaves Pittsburgh 9.00 a. m.
The "Pittsburgh Limited" " Buffalo 8.45 a. m.

SEE THAT YOUR TICKET READS OVER THIS LINE

For schedules, etc., write

L. A. Robison
General Passenger Agent
Pittsburgh, Pa.

POPE
Hartford
AUTOMOBILES

Pope-Hartford Model G

Not everyone interested in motoring desires to possess a high powered four-cylinder car. There is a distinct field and good demand for thoroughly reliable two-cylinder gasoline machines. The simpler engine with the light wieldy construction appeals to the man who likes to drive and care for his own machine and make it a daily companion and a constant source of pleasure for himself and the entire family. Such a car is the Pope-Hartford Model G.

Body: Divided front seat and double side entrance tonneau. **Seating Capacity:** five. **Motor:** two-cylinder, horizontal opposed, located under the hood. **Horse Power:** 18. **Ignition:** jump spark. **Transmission:** sliding gear, three speeds forward and reverse. **Drive:** shaft with bevel gears. **Brakes:** double-acting brakes expanding in drums attached to each rear wheel hub; double-acting band brake attached to rear of transmission shaft.

Price (With top $100 extra.) **$1600**

POPE-TRIBUNE MODEL V.

A modern car at a modern price. It is a thoroughly reliable two-cylinder gasoline, 14 H.P. touring car. A successful combination of simplicity and dependability.

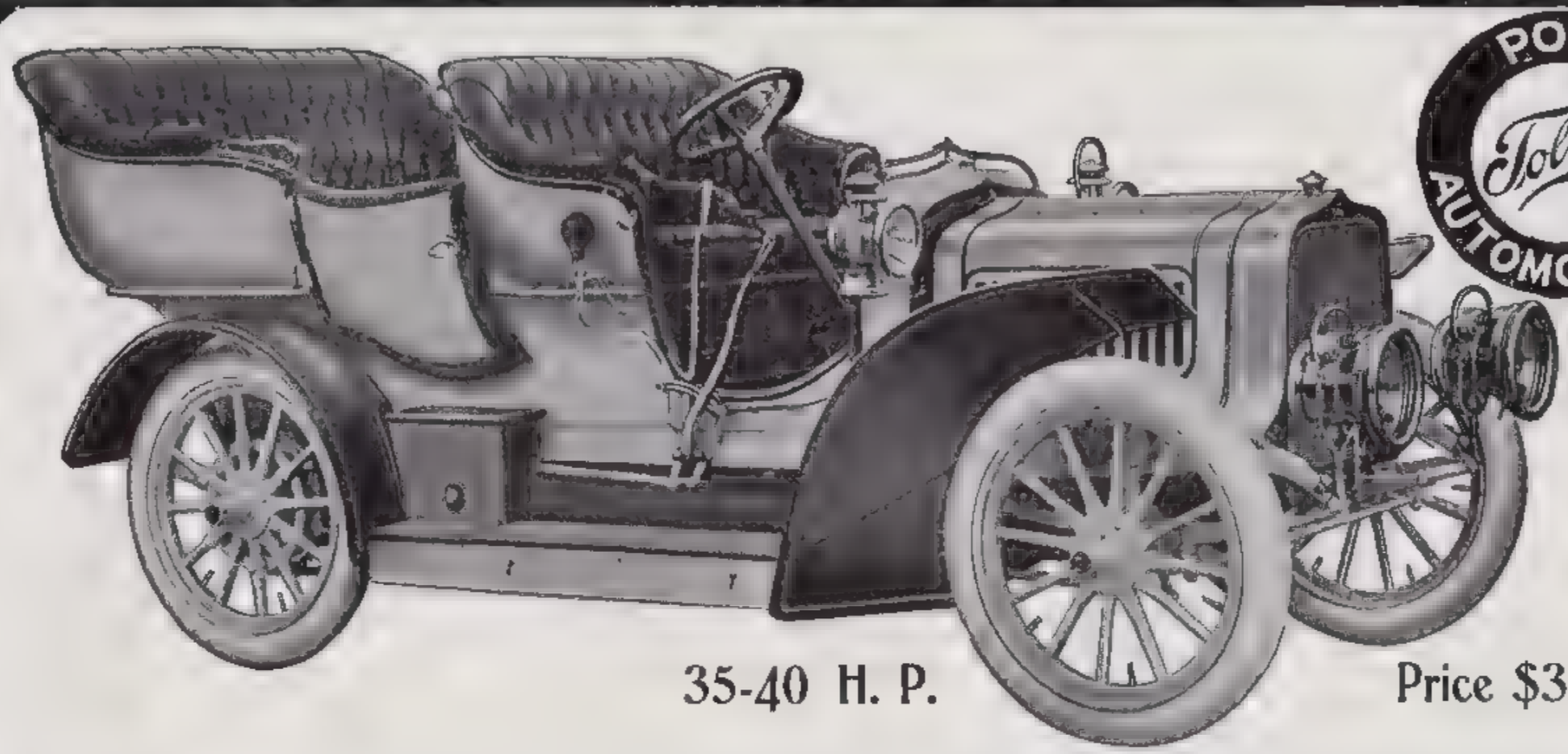
Price with tonneau or rear deck, $900

Branches—New York City, 1733 Broadway. Boston, 223 Columbus Ave. Washington, 819 14th St., N. W.

(Member Association of Licensed Automobile Manufacturers.)

POPE MANUFACTURING CO.
HARTFORD, CONN.

TYPE XII CHROME NICKEL STEEL POPE-TOLEDO.



35-40 H. P. Price $3,500

If you buy a Type XII Pope-Toledo you get with it the assurance that your right of way on any road, anywhere, is absolute, supreme and acknowledged. No matter what make "the other fellow's" car; no matter what he paid, you will not have to "eat his dust." Here is an illustration of what Chrome Nickel Steel means in Pope-Toledo construction: We put a piece of case hardened gear steel, the size of a 50c. piece in a vise. From four to five blows of a hammer will break it. It takes from 150 to 200 blows of the same hammer to break the same sized piece of chrome nickel steel.

POPE
Toledo
AUTOMOBILES

Be Sure the Name "Pope" is on Your Automobile

Members Association Licensed Automobile Manufacturers.

Pope Motor Car Co., Toledo, O.

Boston, Mass., 223 Columbus Ave.
New York City, 1733 Broadway
Washington, D. C., 819 14th St., N.W.

The Stately, Stylish Stanhope

MODEL No. 53, Stanhope Special, Price $2,000, has many new and distinctive features. It is truly a departure in many particulars, and yet none of its features are radical in principle or untried in practice.—The hooded dash; the sliding steering wheel and in connection with it the operation of the electric controller; the use throughout of self contained bearings and the axle of floating type have all been carefully thought out and will be appreciated at a glance. The painting, the upholstry and all the appointments of a fine carriage have been studied in detail.

¶ We make runabouts, surreys, stanhopes, coupes, station, and delivery wagons. Also electric trucks. Write for catalogue.

Pope Motor Car Co.

Waverley Department, Indianapolis, Ind.

BOSTON, MASS., 223 Columbus Ave. NEW YORK CITY, 1733 Broadway. WASHINGTON, D.C., 819-14th St.

Sweet and Charming

as a Debutante—

Post Toasties

Crisp, toasted to a delicate "brown" -Eaten with cream and sugar—

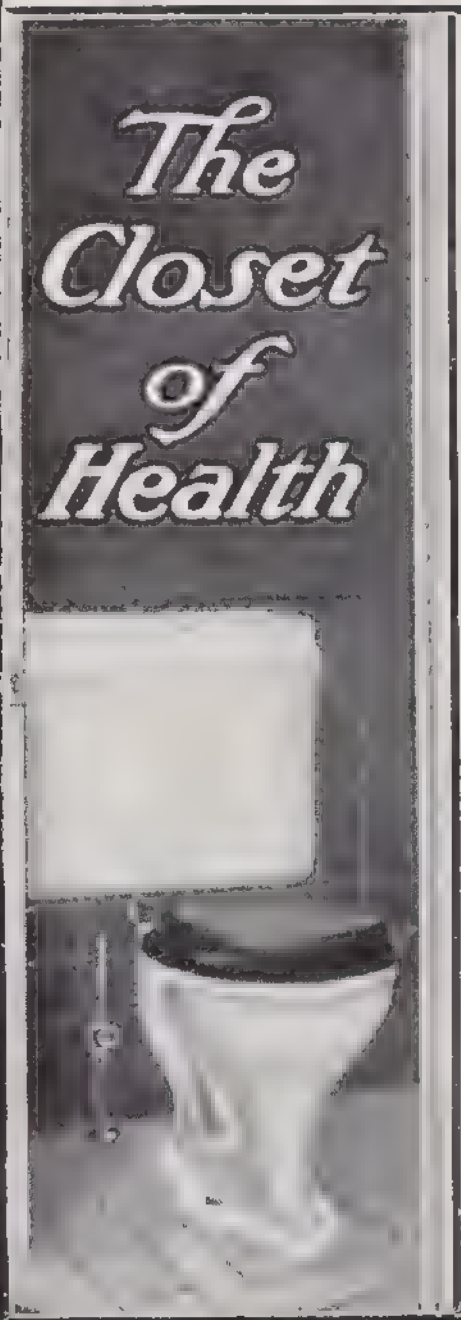
"The Taste Lingers"

POSTUM CEREAL COMPANY, Limited, Battle Creek, Mich., U. S. A.

Send for Free Book on Household Health

Sy-CLO

TRADE MARK



The first step toward a proper understanding of the sanitation of the home is to get the book on "Household Health." It is sent free on application. It explains the perfect principle of the wonderful SY-CLO Closet and shows why it is the safe closet. It tells how to detect the unsanitary closet—how to protect the health of the home.

The SY-CLO Closet has a double cleansing action. A copious flush of water from above starts an irresistible syphonic action from below. The downward rush of the water through the pipes creates a vacuum—a powerful pump-like *pull* which instantly empties the bowl of *all* its contents instead of merely diluting as does the ordinary closet.

Being formed of a single piece of solid white **china** the SY-CLO Closet is without crack, joint or seam for the lodgment of impurity. Nothing can adhere or be absorbed.

By an unusually deep water seal between the closet bowl and the sewer connection making the escape of sewer gas into the home impossible, the SY-CLO Closet gives adequate health protection against the dangers from without.

SY-CLO Closets are heavily constructed and have unusual strength. With ordinary care, they will outlast the building,—a perpetual safeguard of health.

SY-CLO stamped on a closet, no matter what other mark is on it, signifies that it is constructed of the best material, with the aid of the best engineering skill, under the direction of the Potteries Selling Co., and that eighteen of the leading potteries of the United States have agreed to maintain its standard of excellence.

If your home contains a closet of imperfect construction, improper material, or one subject to rust, corrosion, or under surface discoloration, such as porcelain enameled iron, you may be unknowingly exposed to a dangerous source of disease. If you have such a closet, self defense demands that you replace it with the closet bearing the trade mark name of SY-CLO the seal of safety, the safeguard of health.

A book of "Household Health" mailed free if you mention the name of your plumber.

Lavatories of every size and design made of the same material as SY-CLO Closets.

POTTERIES SELLING CO., Trenton, N. J.

A Chime Clock for the Front Hall

Nothing adds so much to the dignity of the hall in a country home as an old-fashioned, tall chime clock.

The chime clock of other days had the defects of the music box of other days—a limited list of tunes played over and over.

The Regina Chime clock gives you your choice from a large combination of airs—any six you like from a list of forty—and can be changed at will.

The clock part is one of the most beautiful specimens of the clock-makers' art in case, in finish and in dial.

The chime part is the famous Regina disc principle — each disc offering six airs in the beautiful chime tones. The airs are all old favorites. Any six you like may be had in combination. The best way is to buy a set of discs and change them from time to time. Thus the chime never becomes monotonous.

You cannot possibly get any idea of the beauty of these clocks or the attractiveness of their music, except by seeing and hearing them.

THE REGINA CO.

Makers of Reginapianos, Reginaphones and Regina Music Boxes

RAHWAY, N. J.

New York salesrooms: Broadway & 17th St.

259 Wabash Ave, Chicago, Ill.

Rex Flintkote ROOFING

**Takes Care of Itself,
Your Buildings and Contents**

Put on a shingle or tin roof and you have to take care of the roof to have it take care of you. The shingles catch fire from falling sparks, the tin-roof rusts—both are prone to leak. Put on a Rex Flintkote roof and you get rid of trouble instead of acquiring it.

Rex Flintkote Roofing

is fire-resisting, weather-proof, a non-conductor of heat, cold, dampness and fumes, and won't blow off or rot.

But don't think that all these things are true of any prepared roofing any more than they are of shingles or tin.

To get a roof that will take care of itself, insist upon the genuine Rex Flintkote, made of chemically treated long-fibre wool—no tar about it. The Flintkote Boy is the sure guide.

Everything needed to lay a Rex Flintkote roof will be found in the roll. Any workman can lay it perfectly. We have a new paint made especially for Rex Flintkote that will give your roof a handsome dark red effect.

SAMPLES AND BOOK MAILED FREE

There are too many *near looking* imitations. "Look for the Boy." We will be glad to send you name of the dealer nearest you who sells Rex Flintkote, and also samples to test, and complete booklet on roofing points.

**J. A. & W. Bird & Co.
33 India St., Boston**
Agents everywhere.

"LOOK FOR THE BOY" TRADE MARK REX ROOFING Flintkote

Pomeroy Salt Association's Building, Pomeroy, Ohio—covered with Rex Flintkote Roofing.

RICHELIEU & ONTARIO NAVIGATION CO.

NIAGARA TO THE SEA

The grandest trip in America for health and pleasure, and affording the [illegible] continent at various places along the route.

Send 6c. postage for illustrated guide to

THOS. HENRY, Traffic Man., Montreal, Can.

RICHELIEU & ONTARIO NAVIGATION CO.

NIAGARA TO THE SEA

The grandest trip in America for health and pleasure. The Thousand Islands, Rapids, Montreal, Quebec and the famed Saguenay River, with its stupendous Capes "Trinity" and "Eternity."

Send 6c. postage for illustrated guide to

THOS. HENRY, Traffic Man., Montreal, Can.

Dickson's Irish Roses

Grown in Ireland and delivered at Sharon Hill in Original Package, At $3.00 per dozen

MESSRS. ALEX. DICKSON & SONS, of Newtownards, Ireland, have the enviable position of being the premier Rose growers of the world. They hold twenty-one National Rose Society's Gold Medals for seedling Roses, being seven times the number held by any other firm. Their Roses planted in America have been so uniformly successful, and their business is increasing so rapidly in the United States, that we as their Agents have induced them to grow twenty-four varieties of Roses suitable to our climate, and which have given satisfaction and pleasure to the planters. This list has been selected by ourselves with the assistance of Dr. Robert Huey, and embraces 12 Hybrid Perpetuals and 12 Hybrid Tea and Everblooming Roses.

These Roses are grown in Ireland, and all orders have the personal supervision of the firm; they are strong two year old plants, and when lifted in October are packed as per order, and shipped in the original packages to us at Sharon Hill, duty and charges prepaid, at $3.00 per dozen. They are then forwarded by us at purchaser's expense to their destination. They should be planted as soon as received, and will bloom the following spring.

HYBRID PERPETUALS

BARONESS ROTHSCHILD. Pale rose.
CLIO. Flesh color.
FRAU KARL DRUSCHKI. Pure white.
GEN. JACQUEMINOT. Crimson scarlet.
LADY HELEN STEWART. Very bright crimson.
MRS. R. J. SHARMAN CRAWFORD. Deep rosy pink.
MARGARET DICKSON. White, flesh centre.
MAGNA CHARTA. Deep pink.
PRINCE C. DE ROHAN. Velvety crimson.
RODOCANACHI. Bright carmine.
ULRICH BRUNNER. Cherry crimson.
GLOIRE DE LYONNAISE. Pale lemon.

HYBRID TEAS

ANTOINE REVOIRE. Flesh shaded yellow.
KAISERIN AUGUSTA VICTORIA. Primrose yellow.
KILLARNEY. Pink, shaded flesh.
LA FRANCE. Bright Pink Rose.
SOUV. DU PRES. CARNOT. Creamy flesh.
VISCOUNTESS FOLKESTONE. Salmon pink.
CAROLINE TESTOUT. Satin rose.
MAD. ABEL CHATENAY. Carmine rose.
MRS. CHAS. GRAHAM. Deep crimson.
CHATAIGNERAYE. Silvery white, shaded yellow.
PHARASAIER. Rose shaded salmon.
WHITE MAMAN COCHET. White.

Order Now for although the Roses do not arrive at Sharon Hill until about November 20, the orders have to be sent to Ireland and are filled in rotation. Address

Robert Scott & Son

Sharon Hill, Del. Co., Pa.

Agents in the United States and Canada for
Alex. Dickson & Sons

If You Wish Something Unique

of lasting artistic value, for a gift, or for your own home—something that will always be prized—send for a copy of The Rookwood Book, which illustrates by handsome color plates many charming pieces of Rookwood in the different types.

Rookwood Pottery

Is A Most Welcome Gift

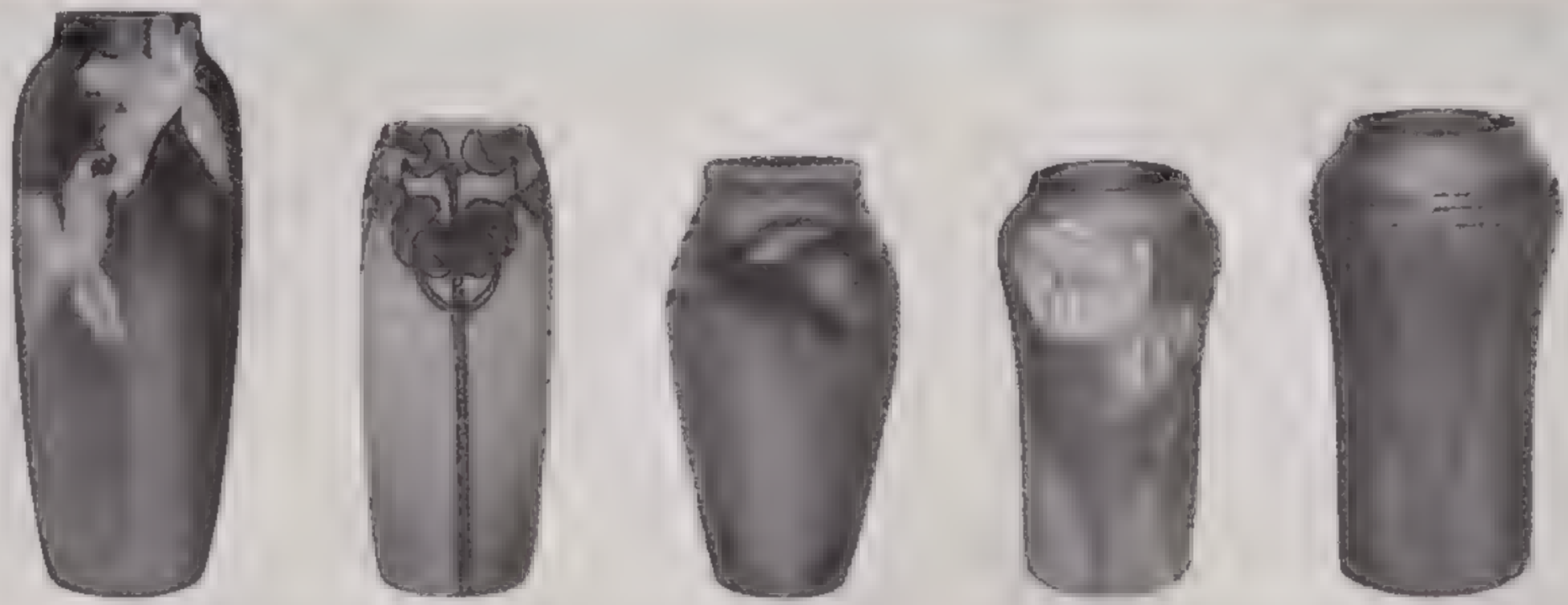
There is nothing more beautiful in pottery than Rookwood—nothing more worthless than the imitations.

This mark is impressed in every piece *and there is no Rookwood without it*

Grand Prize, Paris, 1900.
Two Grand Prizes, St. Louis, 1904.

Rookwood is sold only by Rookwood agents in each city and at the pottery.

The Rookwood Pottery, Cincinnati, Ohio, U. S. A.



IF YOU WANT A UNIQUE WEDDING GIFT

Of real value as a work of art, something that will always be prized and that cannot be duplicated, send a piece of

Rookwood Pottery

There is nothing more beautiful than genuine Rookwood—its delightful colorings in soft shades of gray, pink, blue, green and yellow—its beauty of form, design and glaze have won its world wide reputation as a work of art.

Grand Prix, Paris, 1900.
Two Grand Prizes, St. Louis, 1904.

This mark is impressed in every piece *and there is no Rookwood without it.*

THE ROOKWOOD POTTERY COMPANY, 2 ROOKWOOD PLACE, CINCINNATI, U. S. A.

SHOWING 10-24 INCH ROYAL ON DAIRY BARN, CLIFTON SPRINGS SANITARIUM

THE CLIFTON SPRINGS SANITARIUM

Clifton Springs, N. Y., April 20, 1906

The Royal Ventilator Mfg. Co
No. 415 Locust Street,
Philadelphia, Pa

Gentlemen:

We are enclosing herewith photograph of the Dairy Barn at the Sanitarium Farm, of this place. You will notice it shows the Ventilators in use, and thus far they have proven very satisfactory. We will be glad to receive one of your circulars when it is issued.

Awaiting your further favors, we are,

Yours very truly,

The Clifton Springs Sanitarium,
per H. J. Bostwick.

Dic. H. J. B.

The Royal Ventilator

IS A NAME THAT MEANS SOMETHING

THE additional time and material it takes to make them costs you nothing. Our guarantee of 10 to 20 years is also worth something to you. What you pay for a common ventilator will usually buy the Royal. Proper ventilation for your stock and a preventative against spontaneous combustion in your barns in summer.

We will be pleased to give you an estimate.

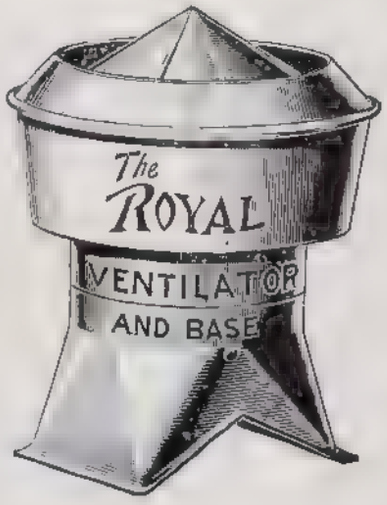
Will you not send for our Booklet? It can be had for the asking.

Royal Ventilator & Manufacturing Co.

Main office and factory, 410 Locust St., PHILADELPHIA, PA.

A Matter of Health

The Royal



Has no Substitute

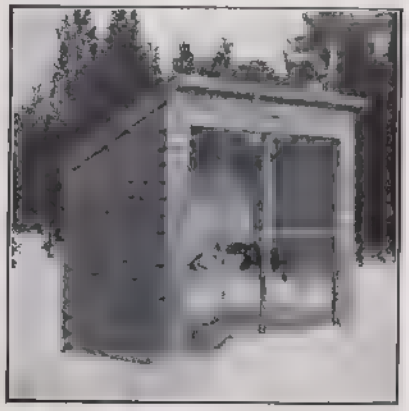
BUILD WARM HOUSES

It's Cheaper than Buying Fuel to Heat Cold Ones

Roof stained moss green, walls stained gray with Cabot's Shingle Stains and lined throughout with Cabot's Sheathing Quilt for warmth.

Cabot's Sheathing "Quilt"

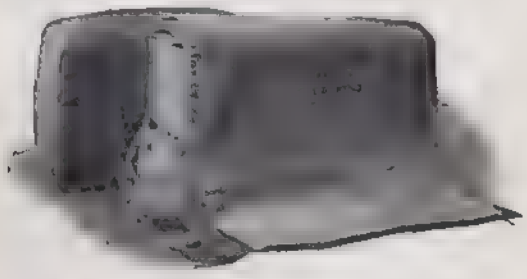
is a "comforter" that will keep the whole family warm. It is six times as good as ordinary building paper, and a house lined with it is wind and frost proof. The cost is less than one cent a foot, and the saving in fuel will pay for it in two ordinary winters — leaving a clear margin of profit in health and comfort.



100° FAHRENHEIT WITHOUT ARTIFICIAL HEAT

The heat of the sun pouring through the glass front and held by the perfect insulation formed by the lining of Cabot's Sheathing Quilt, produced a temperature of 100° Fahrenheit in this little sun-house when the temperature outside was below zero. There was no artificial heat whatever.

Quilt is not a mere felt or paper. It is a thick cushion that keeps the heat in (or out) in exactly the same way that a bird's plumage does. Roofs lined with it will make attic rooms comfortable that would otherwise be unbearably hot in summer, besides preventing the escape of heat in winter.



Cold houses can be made warm by laying new outside finish over Quilt, but the "ounce of prevention" of Quilt is equal to untold tons of the coal cure. Remember your coal bill, remember your doctor's bill, remember the comfort of your family — and *build warm houses.*

Send for sample of Quilt and catalog free.

SAMUEL CABOT, ... Sole Manufacturer

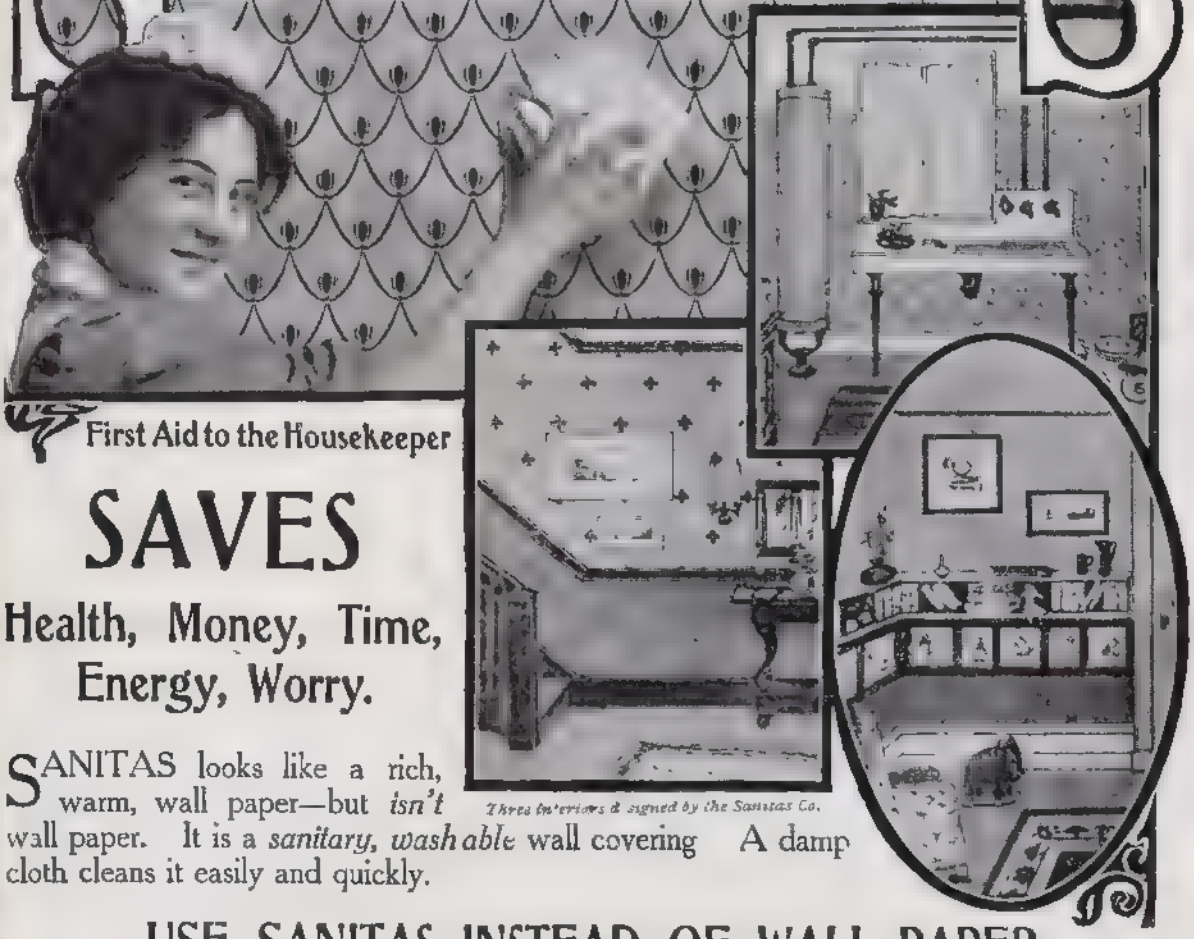
147 MILK STREET, BOSTON MASS.

Agents at All Central Points

MAKER OF CABOT'S SHINGLE STAINS AND CONSERVO WOOD PRESERVATIVES

SANITAS

THE WASHABLE WALL COVERING



First Aid to the Housekeeper

SAVES

Health, Money, Time, Energy, Worry.

SANITAS looks like a rich, warm, wall paper—but *isn't* wall paper. It is a *sanitary, washable* wall covering A damp cloth cleans it easily and quickly.

Three interiors designed by the Sanitas Co.

USE SANITAS INSTEAD OF WALL PAPER

this Spring. It will cost no more at the start, and save you the expense of several ordinary wall papers in the end. It has a cloth foundation that insures long life. Sanitas will be wholesomely fresh when other paper is dingy, nicked, cracked, stained, dangerously full of germs—worse than worthless.

Tile effects for bath-room. Special designs for all rooms.

We do this free send you original sketches and samples made by our Art Department based on information sent in regard to the character of any room or rooms. Write today to

STANDARD TABLE OIL CLOTH CO., Dept. C 320 Broadway, New York City

MERITAS

IS THE NAME OF THE **BEST TABLE OIL CLOTH**

the kind that wears longest because it is made to wear. Many distinctive designs, same price as ordinary makes—but guaranteed. *Ask your dealer for MERITAS and take no substitute.* For samples and valuable information on its uses, address,

STANDARD TABLE OIL CLOTH CO., Dept. C 320 Broadway, New York City

MERITAS STANDARD OTC COMPANY OIL CLOTH

A Cool Summer Outing

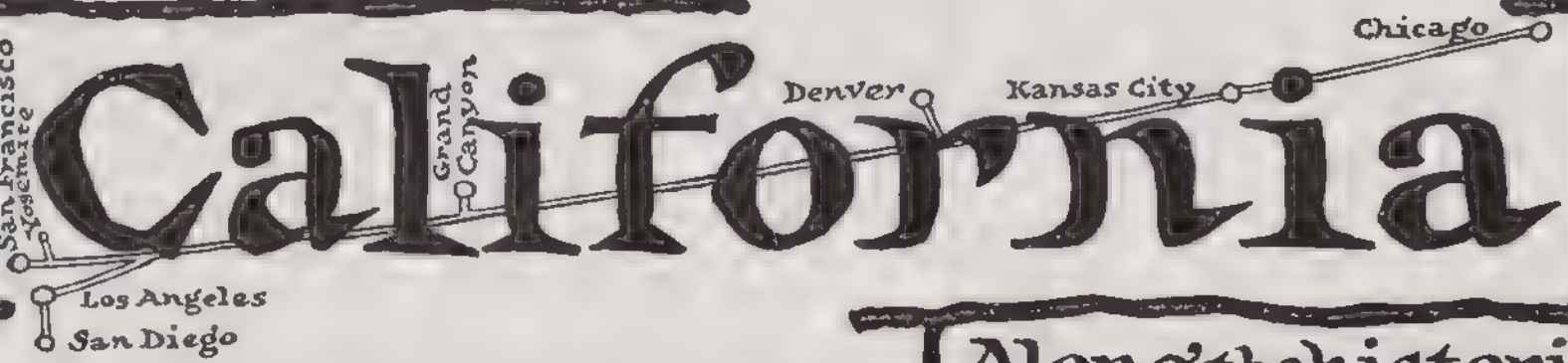
Go West to the Ocean

California Summer weather is delightful along the Pacific and up in the Sierras. You can also visit Colorado resorts, the Grand Canyon of Arizona and Yosemite. Go Santa Fe, the cool, picturesque and dustless way.

Go this Summer

Santa Fe

California



Round-trip excursion tickets to California on sale all Summer at

$75 From Chicago **$69** From St. Louis **$60** From Missouri River

Correspondingly low rates from the East generally.

Also one fare plus $2 last week in June and first week in July.

Not room here to tell all you may wish to know. Won't you write to us and ask for full information? "To California Over the Santa Fe Trail" and "California Summer Outings" are two Santa Fe publications you will wish to read.

Address, Pass. Dept., A. T. & S. F. Ry., Railway Exchange, Chicago.

Along the historic Santa Fe Trail to the Grand Canyon of Arizona and to Yosemite

For
Your Summer
Outing

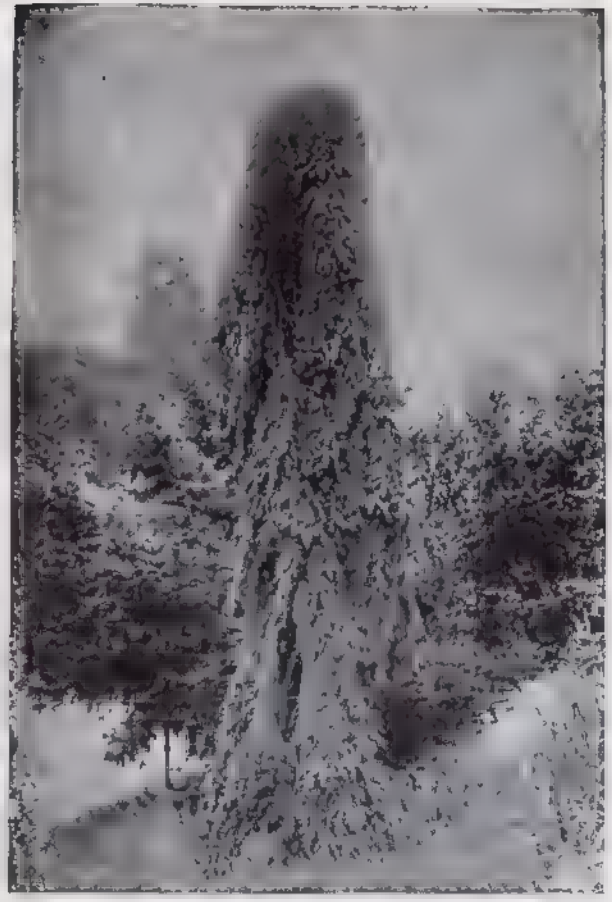
we suggest the—

Colorado Rockies
Grand Canyon
of Arizona
Yosemite, and the
California seashore

Very low Summer excursion rates

Ask for illustrated booklets, giving
full details about each place,
cost of trip, etc.

Passenger Dept., A. T. & S. F. Ry. System,
Railway Exchange, Chicago.



Evergreens Grown in New England

Are better and hardier than those grown further South. August and September are the best months for planting, the percentage of loss being less than in Spring or late Fall.

Blue Spruce, Concolor Firs, Hemlocks, White, Austrian and Scotch Pines, Retinosporas, Thuyas, Junipers and many other rare conifers in all sizes and quantities at lowest prices considering the quality.

HARDY PERENNIALS

We have the largest and most varied stock of field and pot-grown plants in America.

We also offer pot-grown Strawberries, Dutch Bulbs and Lilies.

PLANTING SUGGESTIONS and detailed advice sent by mail without expense to our customers, and we solicit correspondence on all questions relating to selection or arrangement of Plants.

TWENTY YEARS EXPERIENCE in this work enables us to give the most valuable advice both as to economy and best results.

Summer Catalogue of Evergreens now ready.

Address Dept. A

SHADY HILL NURSERY COMPANY

Bedford, Massachusetts

TWENTY YEARS AGO

we were the first of American Nurseries to realize that American gardens and grounds could not be laid out and planted under our severe climatic restrictions without a practical and expert study of plant life and conditions, especially where advice and sound judgment in determining results were needed. We have worked twenty years on this basis, and many hundreds of the most attractive estates in all parts of this country, planned by us, prove that we were right. We can refer to them.

Thousands of plans are made on paper, but real success requires a practical expert knowledge, which comes only with a life study of the relative value of every tree, shrub and flowering plant.

We offer this experience as plantsmen to secure for every client, no matter where, a finished and beautiful result, and at comparatively small cost.

We not only prepare plans for every form of garden and grounds, through the medium of sketches sent by mail, but send promptly men of experience at reasonable rates to advise upon every leading feature of landscape work.

We call special attention to our catalogues, which are hardly equalled for detail, cultural advice and thoroughness. Our large catalogue is regarded as the very best practical work in this country.

Our Nurseries are among the largest in the United States, and we sell at exceptionally reasonable prices. We offer every known hardy form of **Trees, Shrubs, Rhododendrons, Evergreens, Herbaceous Plants, Vines, Bulbs** at prices with quality, which will command your attention.

We will be prompt in taking up any garden problem, or will advise upon the smallest question which any one interested in this work may wish to bring to our attention.

Write us early and get our special views or advice and prices.

SHADY HILL NURSERY COMPANY, BEDFORD, MASS.

BOSTON OFFICE, 155 MILK ST., COR. BROAD ST.

MISSION FURNITURE

For Country Clubs, Summer Homes, Libraries, Smoking Rooms and Verandas

MISSION furniture has all the restful beauty of simplicity, the artistic value of a perfect adaptation to its use and a "solid comfort" and lifetime usefulness, besides.

We feature it prominently in our extensive display of summer-time furniture. The set illustrated is a style exclusively our own.

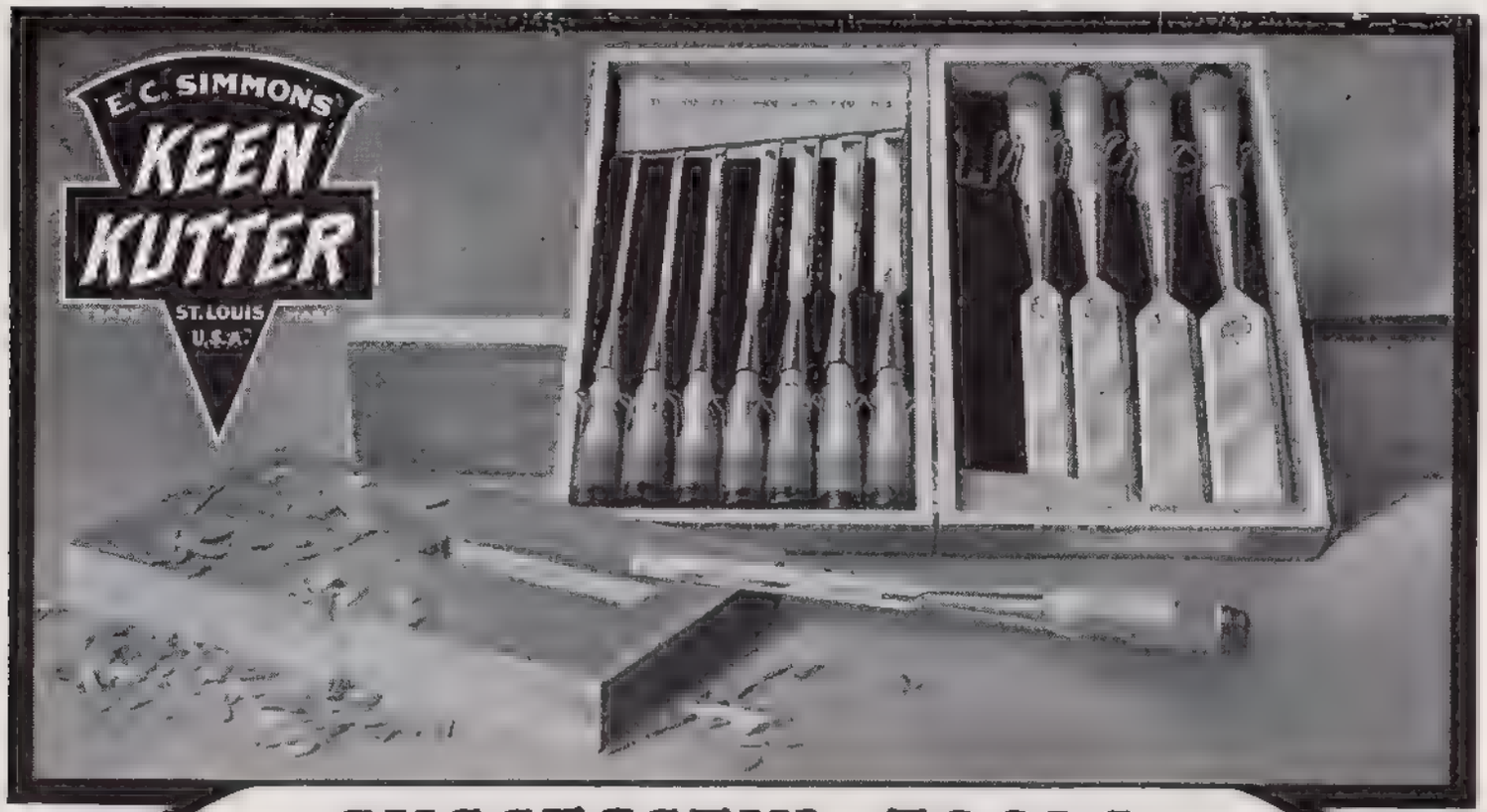
We will sell it as a whole or separately at the following prices:

Settee, $17.25	Arm Chair, $12.50
Rocker, 13.50	Side Chair 7.50
Table, 9.00	

Frames are solid oak weathered finish. Seats are covered with genuine Spanish leather in choice of dark red, nut brown, or combination of green and brown.

DELIVERIES. On all purchases of Five Dollars or more (except C.O.D. orders) we will prepay freight charges in the following states: Maine, Massachusetts, Rhode Island, New Hampshire, Pennsylvania, New Jersey, District of Columbia, Vermont, Connecticut, New York, Virginia, Ohio, Delaware, Maryland, West Virginia. (This does **not** include cartage to your house.)

Siegel Cooper Company, New York City



SUCCESSFUL TOOLS

These Chisels have carved their way to fame. To-day, those who know tools pronounce the Keen Kutter the perfect Chisel Success. Tempered nearly to the handle; hand whetted; sharp and ready for use; handles of selected white hickory with leather heads.

KEEN KUTTER

QUALITY TOOLS

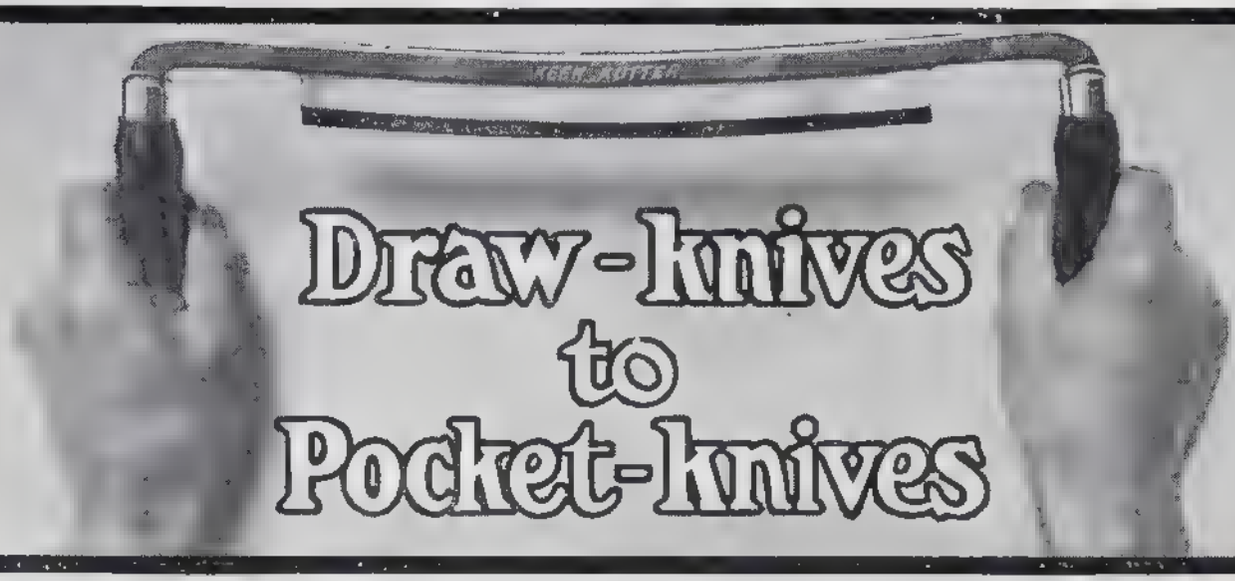
are *all* successful tools—tools that have won their way by hard, honest, true work. Every step in their success has been reached by sheer force of *merit and quality.* Whenever you want perfect tools –Saws, Chisels, Bits, Gimlets, Awls, Planes, Hammers, Hatchets, Axes, Drawing-knives, Pocket-knives, Screw-drivers, Files, Pliers, Glass-cutters, Ice-picks, Lawn-mowers—ask for Keen Kutter. For 37 years Keen Kutter Tools have been doing perfect work; for 37 years they have been guaranteed, and for 37 years have been sold under this mark and motto:

"The Recollection of Quality Remains Long After the Price is forgotten."

Trade Mark Registered.

If not at your dealer's, write us. **Tool Book Free.**

SIMMONS HARDWARE COMPANY, St. Louis and New York, U. S. A.



Draw-knives to Pocket-knives

Saws—Bits—Pliers—Files—Chisels—Awls—Braces—Drills—Planes
Hammers—Gimlets—Hatchets—Screw-drivers—Axes—Wrenches
Squares—Ice-picks—Lawn-mowers—Glass Cutters—Garden Tools

All Tools—any Tool for any use—so long as you want the very best of its kind may be found among the famous

E. C. SIMMONS KEEN KUTTER TRADE ST. LOUIS MARK U.S.A.

KEEN KUTTER

Quality Tools

Even if you want only a gimlet you want one that will bore straight and smooth without tearing the wood or losing its edge. To get it you simply ask for a Keen Kutter Gimlet. So it is with any other tools you can think of, together with Razors and Table Cutlery. There is no argument—no question—they are the best you can buy at any price. We have sold 100,000 Draw-knives and *not one* has proven defective. Isn't it worth remembering? If your dealer doesn't keep Keen Kutter Tools write us. Sold and guaranteed for 37 years under this famous mark and motto:

"The Recollection of Quality Remains Long After the Price is Forgotten."

Trade Mark Registered

Tool Book Free.

SIMMONS HARDWARE COMPANY,
St. Louis and New York,
U. S. A.

Tool Requirements

What do you expect of a hammer—a rightly formed handle that can't work loose or come off—a nose you cannot batter—the true hang and balance for straight driving? Then you must get a hammer on which this name and trade mark appears—

KEEN KUTTER

E. C. SIMMONS KEEN KUTTER TRADE ST. LOUIS MARK U.S.A.

No matter what kind of tools you want, this name signifies that every requirement in quality and service will be met.

Just consider what an advantage it is to go into a store with the absolute knowledge that you can get the best tool for any use by simply asking for a Keen Kutter and, furthermore, that you have the price guaranteed if any flaw develops.

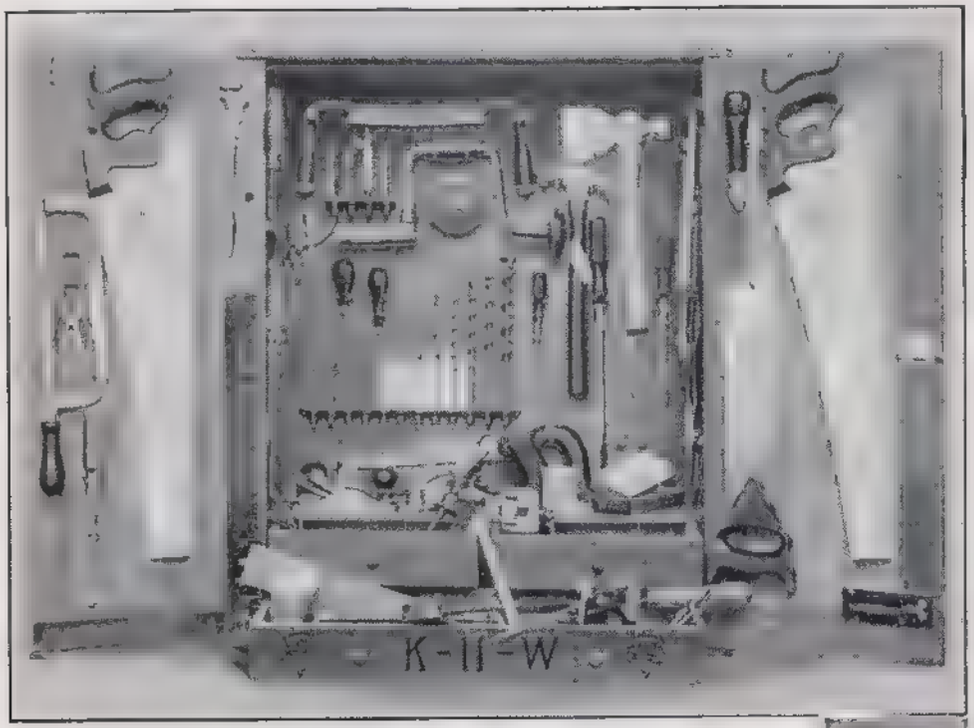
If your dealer doesn't keep Keen Kutter Tools, he will order them for you; or if you write to us we will tell you where to get them. Keen Kutter Tools have been sold for 37 years under this mark and motto: ***"The Recollection of Quality Remains Long After the Price is Forgotten."***

Trade Mark Registered.

TOOL BOOKLET FREE

SIMMONS HARDWARE COMPANY, St. Louis and New York, U. S. A.

The Right Tool in the Right Place



What do you do when a door sticks, or when you want a shelf put up, or a curtain pole sawed off?

Have you all the tools necessary for the numberless jobs about the house, and are they all keen and sharp and always in perfect condition?

KEEN KUTTER

TOOL CABINETS

E. C. SIMMONS KEEN KUTTER TRADE ST. LOUIS MARK U.S.A.

are made of handsomely finished natural oak, hand rubbed and contain just the selection of tools for practical purposes Every tool is a KEEN KUTTER and fully guaranteed. Each tool has its own place so that it is always where you can lay your hand on it and is easily kept in perfect condition

Ask us to send you handsomely illustrated catalogue showing our complete line of KEEN KUTTER Cabinets; then select the Cabinet containing the assortment of tools you want and your dealer will supply you If not, write us and give us your dealer's name. This booklet contains Cabinets from $8.50 to $50.00, according to assortment of tools. *A postal will bring it*

SIMMONS HARDWARE COMPANY, St. Louis and New York, U.S.A.

E. C. SIMMONS KEEN KUTTER TRADE ST. LOUIS MARK U.S.A.

Good Natured Tools

It is not necessary to *force* Keen Kutter Tools.

Keen Kutter Bits, for example, work quickly and easily in any kind of wood. Lips are long, strong and perfectly tempered, adding years to the life of the tool. Keen Kutter Tools *like* hard work. The edged tools never lose their temper—handled tools never work loose or fly off—hammering tools keep their faces straight.

KEEN KUTTER

Quality Tools

include tools of all kinds Saws, Chisels, Bits, Drills, Gimlets, Awls, Planes, Hammers, Hatchets, Axes, Drawing-knives, Pocket-knives, Screw-drivers, Files, Pliers, Glass-cutters, Ice-picks, Lawn-mowers, and many others, all guaranteed by the Keen Kutter name.

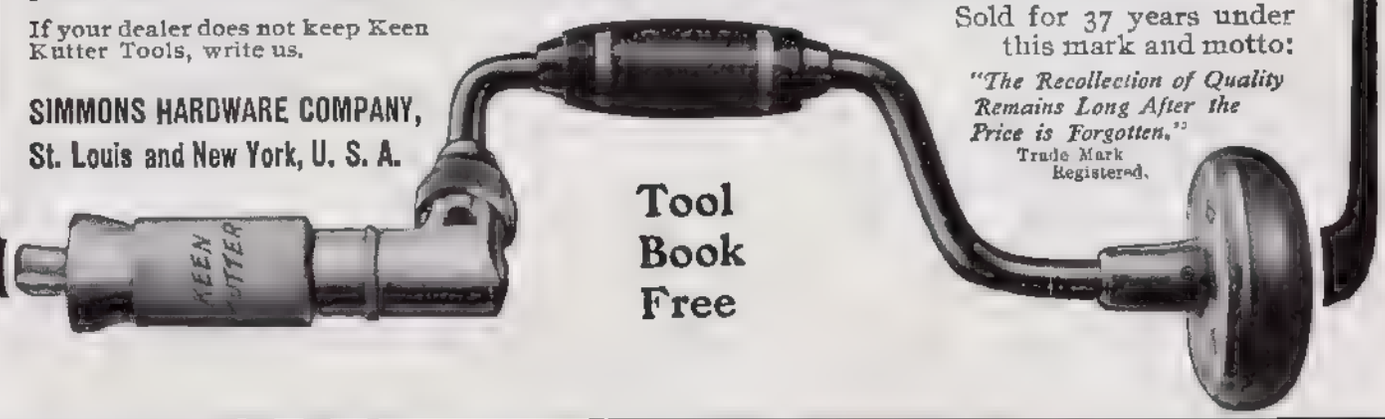
If your dealer does not keep Keen Kutter Tools, write us.

SIMMONS HARDWARE COMPANY,
St. Louis and New York, U. S. A.

Sold for 37 years under this mark and motto:

"The Recollection of Quality Remains Long After the Price is Forgotten."

Trade Mark Registered.



Tool Book Free

Neglect Your Fire Insurance

The Simpson
Motor Lawn-Mower and Roller

For Club Grounds, Golf Courses, Public Parks, Large Lawns, etc.

Advantages: *Quantity* of work tripled. *Economy*—lawn expenses reduced to minimum *Quality* of work vastly improved.

One machine's work exceeds the work of three horse mowers, through faster and better service. Climbs grades impossible to horses. Works under low foliage No objectionable hoof prints and refuse. Untiring in the hottest weather. No stable bills. No "Vet" bills No rolling bills.

Testimonials from **satisfied users** of three seasons actual experience. Write for illustrated catalogue

Wm. Simpson & Sons, 1011 Pennsylvania Building, Philadelphia

SMITH GUNS

Never Shoot Loose
Are very simple in mechanical construction
Are guaranteed in every particular, including shooting qualities
The Hunter One-Trigger never doubles—never balks

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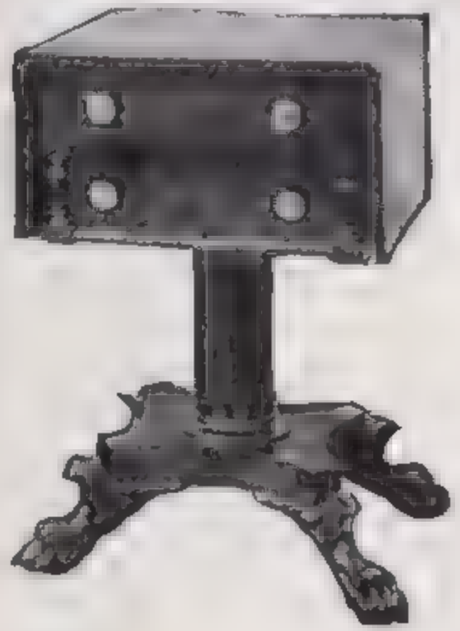

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The object is to make COUNTRY LIFE IN AMERICA the *recognized* national authority on country real estate, as it is in fact, and to serve those of our readers who are interested in the subject. In order to get an idea of your requirements it will be necessary to have information on the points mentioned below.

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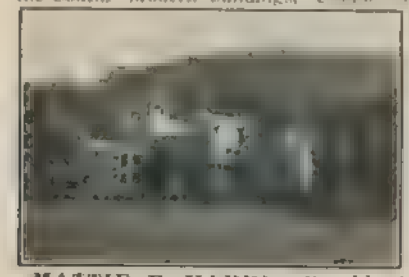

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MATTIE P. HARRIS, President, Roanoke, Va.
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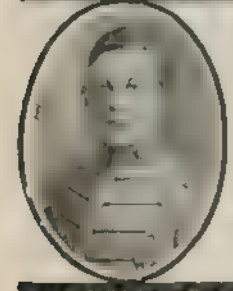

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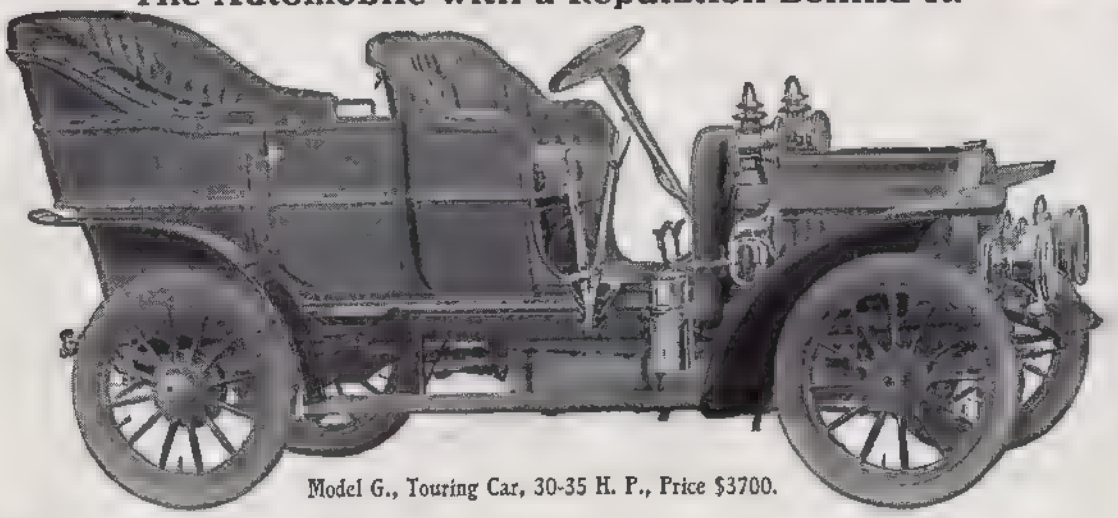

Model G., Touring Car, 30-35 H. P., Price $3700.

THE height of sane engineering skill is represented in the new Studebaker models. For high efficiency with low weight; for progressiveness tempered with common sense; for elegance combined with durability; for noiseless mechanism; for ease of control; for accessibility of vital parts—for "cars built for service," look to Studebaker.

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We will gladly supply information regarding them and
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A WOMAN'S COLLEGE IN THE SOUTH

Through the beneficence of Mrs. Indiana Fletcher Williams this new college for women has been made possible. A munificent endowment provided for in the founder's will has permitted the establishment of a college of the grade of Vassar, Wellesley, Smith and Bryn Mawr. Sweet Briar Institute is located on the main line of the Southern Railway but a few hours' run from Washington. It is unsurpassed for health, comfort and beauty of surroundings. The first college year opens Sept. 27, 1906. Catalogue and views sent on application to

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Hot Air Pumping Engine

It runs by heat

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FUN AND INSTRUCTION for BIG and LITTLE BOYS

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Plans and estimates for any work, pertaining to the Home.
Interior wood-work and furniture designed and executed.
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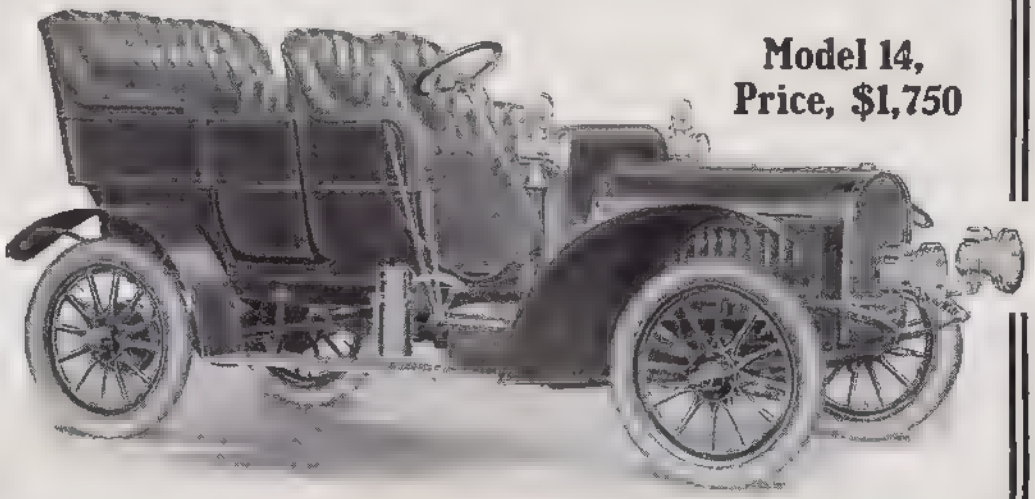
June Time Is Rambler Time

With the passing of alternate sunshine and storm, when the fair weather promise of today is fulfilled tomorrow, the call of nature becomes insistent and the paths of man lead to rural surroundings.

There is no better way of reaching the heart of nature than in an automobile, and no better automobile than the Rambler.

The pleasure of an afternoon trip or an extended tour is entirely dependent upon the reliability of the car, and there is no more positive way of insuring against marring incidents than the use of a Rambler.

The 1906 line comprises two types, in two and four-cylinder construction, designed to meet the requirements of the non-professional operator and the enthusiastic expert. We offer several models in each type and invite your early inspection. Catalogue free.



Model 14, Price, $1,750

Main Office and Factory, Kenosha, Wis., U. S. A.

Branches:

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Boston, 145 Columbus Ave. Philadelphia, 242 No. Broad St
San Francisco, 125-131 Golden Gate Avenue
New York Agency, 38-40 W. 22nd St.
Representatives in all leading cities.

Thomas B. Jeffery & Co.

Rambler

The Right Car at the Right Price

There is a system of rigid tests and thorough inspection of each part and feature of the Rambler cars, whereby every possible weak spot is found in the factory, not on the road.

This system covers every step from the design and selection of the raw material to the finished product and begets a car that is ***right*** and ***stays right*** without tinkering and adjustment.

If this, in connection with abundant power, elegant appearance and simplicity of control, appeals to your judgment we invite your most critical examination of our Model 14.

In it is embodied every modern feature that has proven worthy of adoption and the facilities of the largest automobile plant in the world enable us to present it at a price far below anything approaching it in quality and equipment.

Main Office and Factory, Kenosha, Wisconsin

Branches:

Chicago, 302-304 Wabash Avenue
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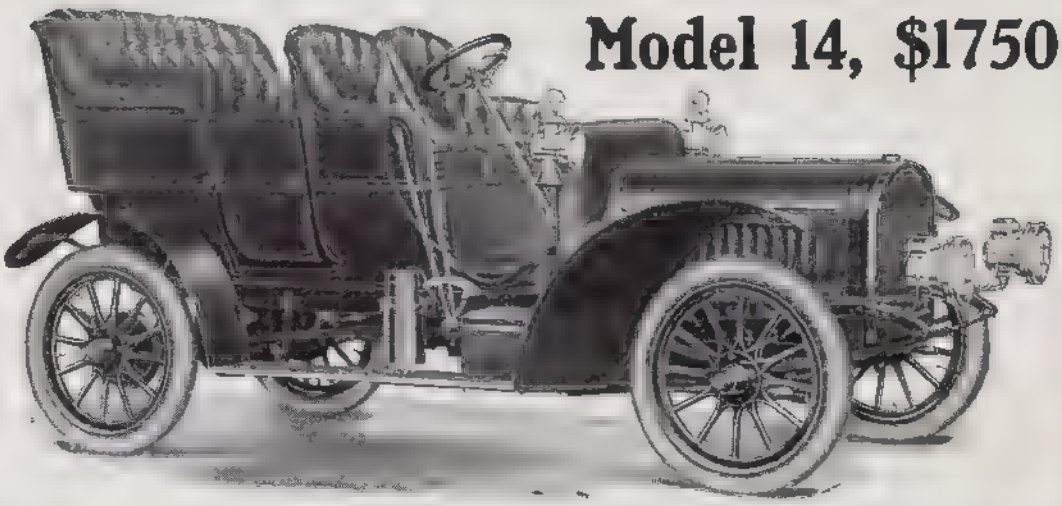
Thomas B. Jeffery & Company

Model 14, $1750



The axle construction of a high power touring car is a matter of vital importance.

By exhaustive tests, cold drawn steel tubing, as used in the Rambler cars, has been proved far superior to any other construction.

Rambler front axles are reinforced by a vertical center wall pressed into place before the tube is bent.

Steering knuckles are drop forgings fitted with adjustable taper spindles and ball thrust bearings.

The rear axle of Model 15 (side chain drive) is formed from one piece of steel tube forged to a solid taper at the ends, thus forming a one piece axle without joints or welds.

This is simply one of many special features that make the Rambler ***the car of steady service.***

The second edition of our 1906 catalogue fully describes six models, ranging in price from $1,250 to $3,000. It is at your service.

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wis., U. S. A.

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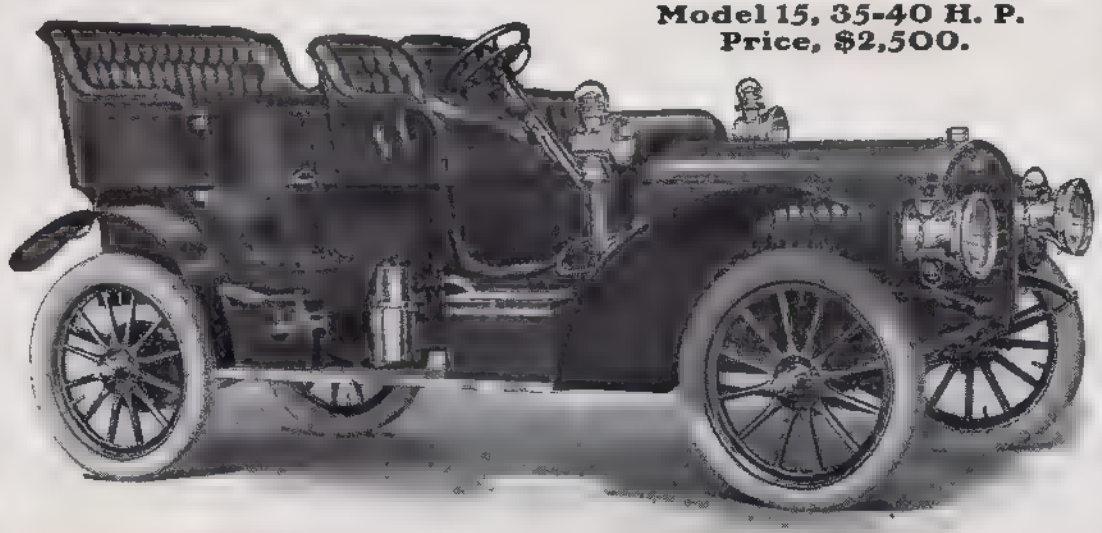
Representatives in all leading cities.

Model 15, 35-40 H. P.
Price, $2,500.



"About Tobey Handmade Furniture"

is the title of a new book from which this illustration and the following extract is taken.

THE CABINET MAKERS

"I have said that nothing can come out of a product that does not enter into it. The character of a product is conditioned not only by the skill of a craftsman but also by his character.

"When one sees the men at work in the Tobey workshop he is not surprised at the product. For the most part these men are Norwegians who learned their craft in the old country under the rigid schooling of some master's shop and under the supervision of the civic authorities."

If you are interested in furniture that has character and individuality—the qualities that come only with a handmade product—furniture that represents the skill and experience of men who enthusiastically love their work, write for this book.

It is illustrated with photographs of the men at work, pieces of the furniture and bits of hand-carving, etc. It tells an interesting story of this striving for an ideal in furniture, and will teach you a keener appreciation of beauty in wood and workmanship.

Every piece of Tobey Handmade Furniture bears this stamp in copper.

TOBEY CABINET MAKER
"As are the men, so is the product."

The Book will be sent on request.

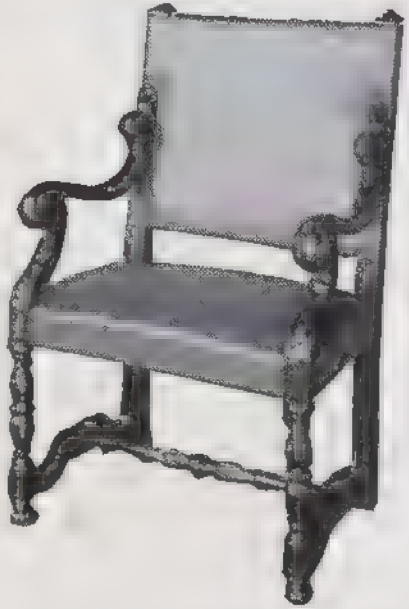
The Tobey Furniture Company

CHICAGO
Wabash Ave and Washington St.

NEW YORK
11 West 32nd Street

"I would have our ordinary dwelling houses built to last, and built to be lovely; as rich and full of pleasantness as may be."

—RUSKIN



Tobey Handmade Furniture

is produced for just such homes. The richness in material and handicraft, the perfect finish, the exquisite carving, all tend to give our handmade furniture that dignified elegance which is the true keynote of refinement.

If you are seeking this kind of furniture for your home, we shall be pleased to enter into correspondence with you, and submit suggestions and sketches.

THE TOBEY FURNITURE COMPANY

Wabash Ave. and Washington Street
CHICAGO

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NEW YORK

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AT COOPERSBURG, PA.

100 Head Choicely Selected Imported Jersey Cows, Heifers and Bulls

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T. S. C.

Those who have seen our present importation are free to admit that they are the best that we have ever imported.

At the coming sale the "CREAM WILL BE THICK," and the chances for buying as good as at any of our previous sales. Many of the cows and heifers will be in calf to the famous Golden Fern's Lad, and his blood predominates.

A Pleased Buyer is the Best Advertisement

Catalogs ready May 10, 1906

Address

T. S. Cooper & Sons

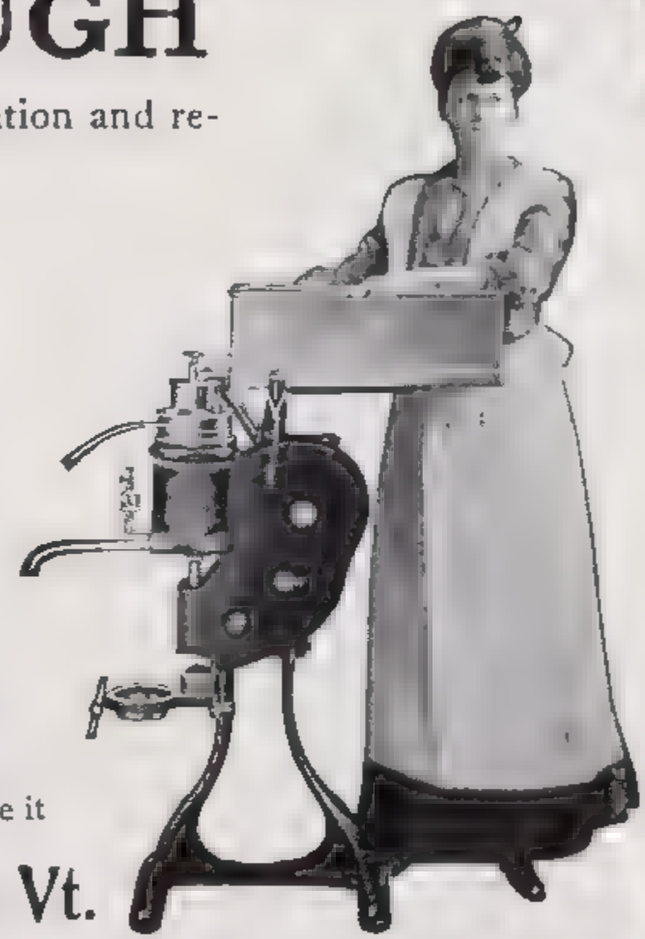
"Linden Grove" Coopersburg, Pa.

Please mention "Country Life in America"

IT'S THOROUGH

Thoroughness, whether in man or machine, commands our admiration and respect. That's exactly the quality that has made the Improved

U. S. CREAM SEPARATOR



the most popular separator on the market to-day. It does its work more thoroughly than any other—holds the **WORLD'S RECORD** for clean skimming.

Then, it is thoroughly well built—**so** thoroughly and substantially that it lasts many years. It's thoroughly simple and safe, easy running, easy to handle and quickly cleaned, and so neat you can set it in *any* convenient location.

Our new catalogue No. 28 goes thoroughly into *every* detail of both construction and operation of the U. S. Plain descriptions made plainer by the many fine engravings of the actual parts—will prove to you that the U. S. is a thoroughly satisfactory cream separator. If you need a cream separator (and if you have three or more cows, you do) **get the best** and that's **the U. S.** Anyway, get the book, read it, and **judge for yourself.** Please say "Send new catalogue No. 28," and you will receive it promptly.

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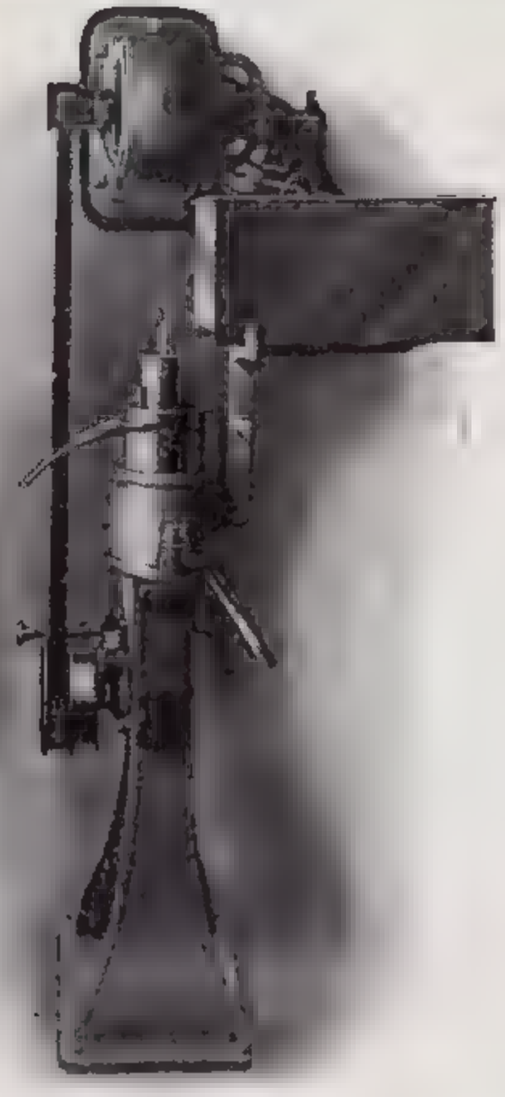
PROMPT DELIVERY from 18 Distributing Warehouses centrally located in U.S. and Can.



U. S. Separator run by Electric Motor

Improve Your Dairy

No matter how good a herd of cows you have, or how well they are taken care of, or how carefully they are fed, your efforts are more or less wasted if the milk, the result of it all, is not taken care of in the best way possible.

Before cream or butter can be obtained the milk must, of course, be skimmed, and to do the skimming most effectively you need a

U.S. Cream Separator

in your dairy. If the gravity or setting method is now used, a U. S. will increase your butter yield from 1-4 to 1-2. That is, if the skimmed milk from the old way were run through a U. S. Separator it would take out from 1-4 to 1-2 as much cream as was obtained by hand skimming.

Now there are other cream separators which will effect a saving over gravity system, but because the U. S. Separator holds the **World's Record** for clean skimming, it is a greater saver and bigger money-maker than any other.

We want to tell you how this record was made, and what it means—our attractive new catalogue will do it, and at the same time fully explain the construction of the U. S. We'll be glad to mail you a copy on request. Send for our big handsome catalogue No. 71. Write us now, addressing,

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

Eighteen centrally located distributing warehouses throughout the U. S. and Canada.

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The Guernsey cow here illustrated has proved herself the biggest butter producer in the world. This letter tells the story.

"MILWAUKEE, WIS., Feb. 12, 1906

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The butter exhibited from my farm was awarded **First Prize** over all at the State Dairymen's Convention at Waukesha, Wis., scoring **97 1-2** points.

I use the United States Cream Separator, of which I have three on as many farms.

FRED RIETBROCK."

Don't miss the point of this story: GOOD COWS and the

U. S. CREAM SEPARATOR

is a combination that means biggest profit to dairymen. You feed your cows to produce rich milk, and to get the most butter-fat from that milk you need a U. S. Cream Separator because it Holds the WORLD S RECORD for CLEAN SKIMMING.

Our new, handsome, 1906 catalogue tells all about the U. S. Read it before you put any money into a cream separator. Just write us, "Send catalogue number 28." You will get one by return mail. Better lay this paper down and write us now while you think of it.

VERMONT FARM MACHINE CO., Bellows Falls, Vermont

Eighteen centrally located distributing warehouses throughout the United States and Canada. Prompt delivery. 436

Architects' Directory

In this department are printed advertisements of architects, landscape designers, sanitary and constructing engineers. This department enables architects to get in touch with readers who intend to build. Special rates. Cuts made free. Address ARCHITECTS' DEPARTMENT, COUNTRY LIFE IN AMERICA, 133-137 East 16th Street, New York.

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The designs are illustrated by One half-tone engravings made from water color drawings and photographs, showing the buildings as they will actually appear when completed. Each design has also a first and second floor plan carefully worked out and figured, and in a number of instances the interiors are shown from photograph plates; also accurate estimates of cost, general specifications and useful information on planning and building. **Colonial, Artistic, English Half Timber** and other styles of **Architecture. Special designs and detailed plans prepared. Houses altered and remodeled.**

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This book has had more thought and labor expended on it than any of its predecessors, and is in every way more complete. It contains floor plans, descriptions, estimates and correctly drawn perspectives. In design, in clearness and in its value to all who intend to build a beautiful home it is unlike any other publication.

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A volume containing all the designs shown in the new book AND INCLUDING A SELECTION OF THE MOST ATTRACTIVE HOUSES FROM MY PREVIOUS ISSUES, has been prepared. Price, by express prepaid, $5 00.

These designs are *new, original, unique, consistent.* They combine beauty of exterior with complete and convenient interiors. If you are at all interested in the subject you will find these publications valuable. Sketches to carry out your ideas and special plans made. Complete plans for any of the designs furnished. Address

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Room 614, 17 State Street, NEW YORK

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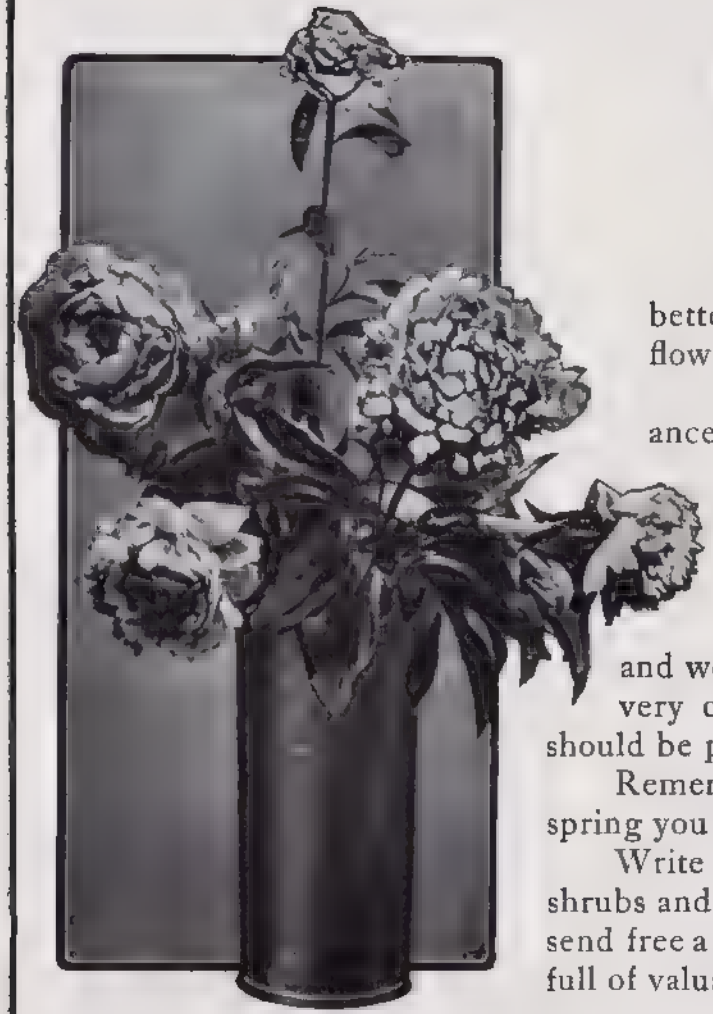

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Fall is the best time to plant them. The earlier it is done the better—the more certain you will be of having a good display of flowers next spring.

There is no other plant that will give such an attractive appearance to the home grounds, nor one that will supply such an abundance of, or more desirable flowers for cutting. Once they are planted they practically take care of themselves, and are no trouble. They can be massed in solid beds, planted singly, and are also well adapted for planting in borders.

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The book we want to send you free for the asking tells you how to "keep" things longer—days longer. Tells why the railroads, with whom refrigeration is a business, use the Bohn Syphon System exclusively—every railroad in America—after separate and conclusive tests: fully describes and illustrates regular and special Bohn Syphon Refrigerators for Homes, Clubs, Hotels, Restaurants, Yachts and Private Cars at low prices, varying according to size.

* * *

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Cold *dis*courages germ life, but moisture *en*courages it, and that's why milk sours so much quicker in other refrigerators—the moisture helps the germs multiply almost as much as the cold hinders them. In the Bohn, the Syphons pass the air through the ice chamber ever so many more times, but don't let it stay with the ice long enough to absorb moisture.

That's why the Bohn is 10 to 20 degrees colder than any other, and the *only* perfectly dry refrigerator—a wet cloth hung in a Bohn will dry before one just as wet hung outside in the open room.

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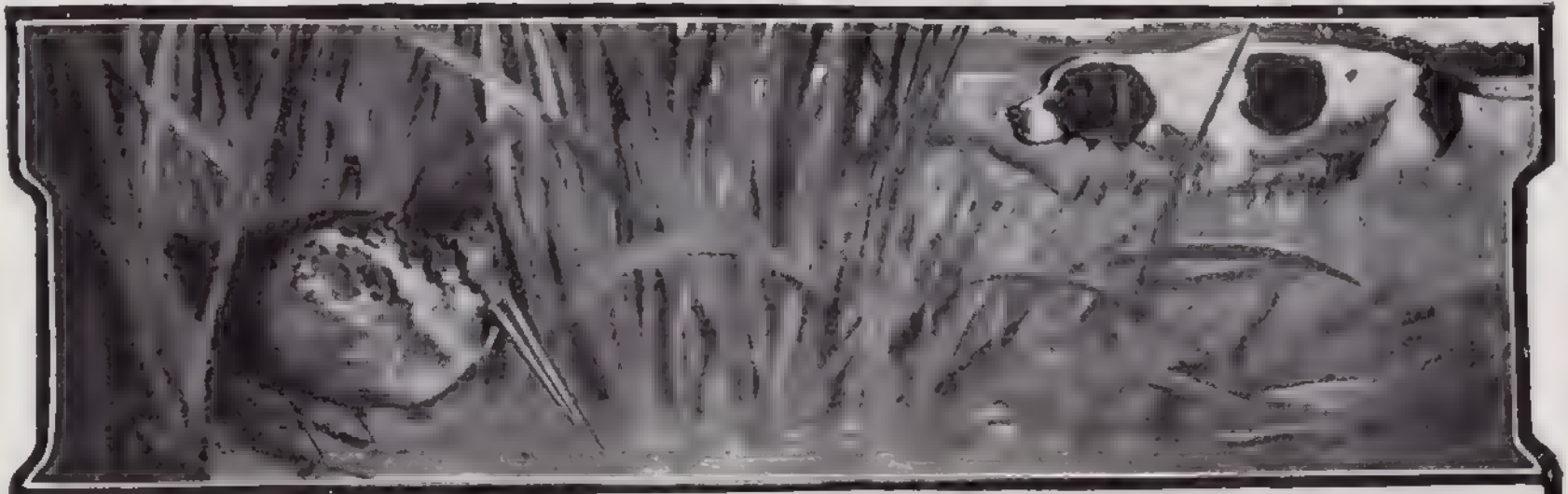

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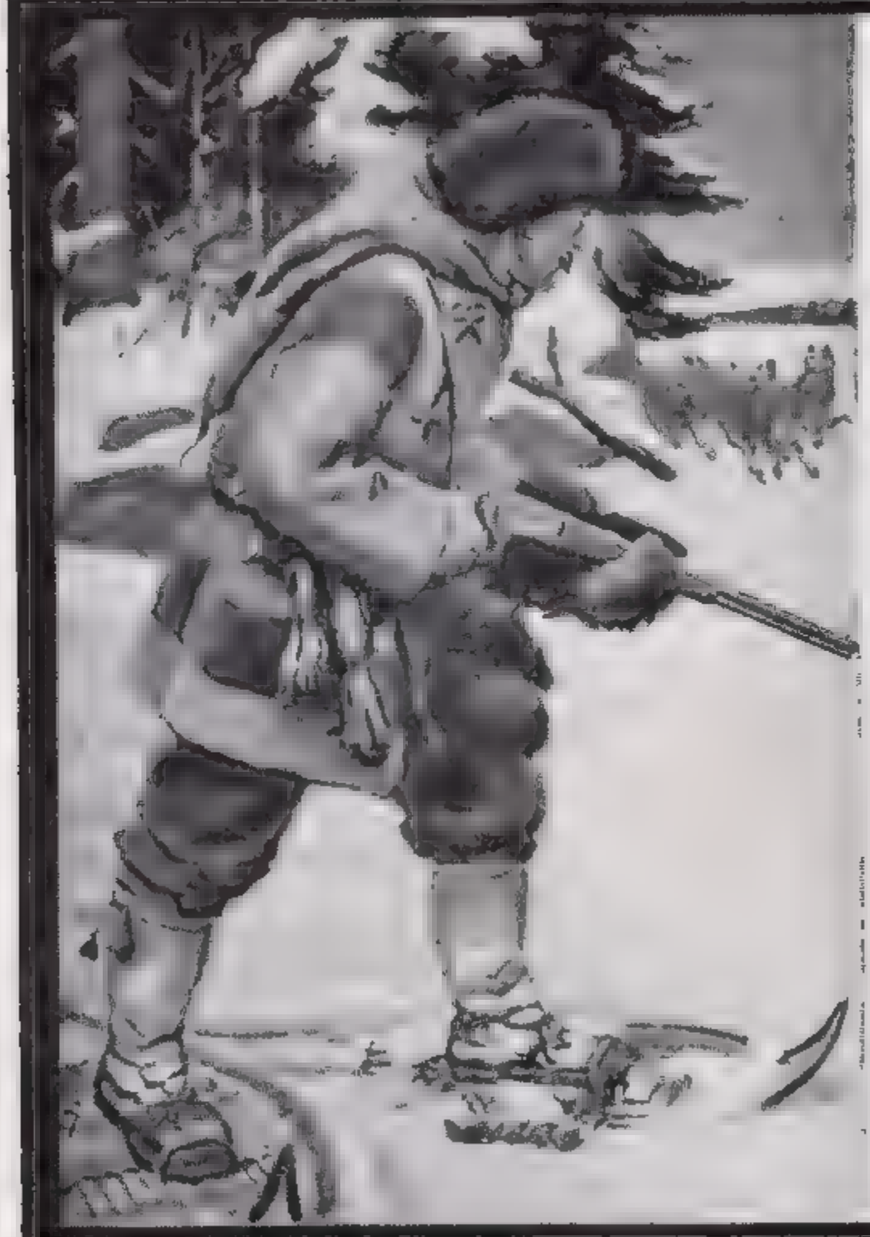

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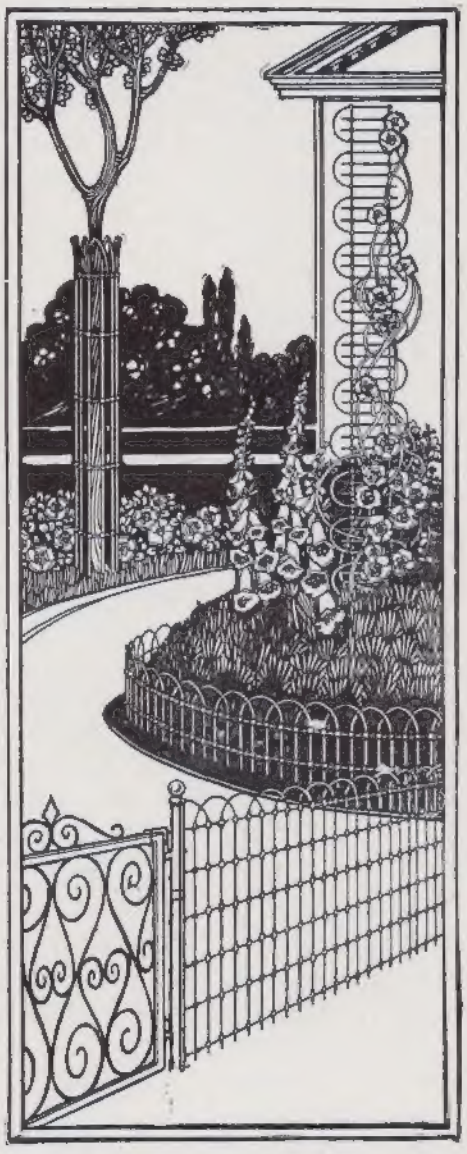

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